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REPORTS FROM THE SCIENTIFIC EXPEDITION TO THE NORTH-WESTERN
PROVINCES OF CHINA UNDER THE LEADERSHIP OF DR. SVEN HEDIN

— THE SINO-SWEDISH EXPEDITION —

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EXCAVATIONS AT SHAH TEPÉ, IRAN

BY

T. J. ARNE

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GÖTEBORG 1945

I N T R O D U C T I O N

The archaeological discoveries made in North China in the first half of the 1920's by Professor J. G. ANDERSSON revealed a previously unknown culture, dating from the 3rd millenary B. C. and partly a later period. That culture displayed astonishing similarity, especially in its painted pottery, with the so-called Tripolie culture in Southwest Russia and with other kindred cultures in Western Asia. It appeared to be a matter of importance to investigate what connection there might be between those cultures, so wide apart geographically, and the subject was zealously discussed within the committee of the Swedish Oriental Society, of which the CROWN PRINCE OF SWEDEN was chairman. Through the kind offices of the Consul-General A. LAGRELIUS a sum of money was handed by the late mr. G. WENNERSTEN to the Society, sufficient to enable the writer to undertake a journey in 1929 to the republics of Turkmenistan, Usbekistan and Kasakstan for the purpose of examining the possibilities of an expedition of archaeological research. Although keen interest was taken in the plans, put forward by means of lectures in Ashkhabad, Samarkand and Alma Ata, of a joint Swedish-Sovjet investigation, the undertaking stranded on the opposition of the Central Russian authorities.

A short time afterwards (1930) a law concerning the conservation and investigation of the country's antiquities was passed in Iran, generously allowing foreign scientific societies and private investigators to make excavations in the country subject to certain conditions; the Persian Government claimed half of whatever might be found. As the ancient route from East to West had in all probability also passed through Persia, it was considered most advantageous to apply for a concession to make an investigation in that section.

The Royal Swedish Academy of Belles-lettres History and Antiquities accordingly asked the Iranian Government for permission for the writer to make archeological excavations on the Turkoman Steppes east of the Caspian Sea and south of the river Atrek (and if necessary more to the east in the Budjnurd country). In 1932 came the reply, which in principle was in the affirmative.

Funds for the expedition were then made available. Through the medium of

Dr. SVEN HEDIN a sum of 15.000 dollars had been granted by a Swedish-American maecen, M. A. APPLETON of Chicago, and therefore the expedition should be described as a link in the investigations made in Central Asia by Dr. SVEN HEDIN and his companions during the past decade (The Sino-Swedish expedition). The Swedish Oriental Society contributed 3.000 kronor, and the Swedish Government 2.000 kronor to defray freight charges. Even these funds were not quite sufficient.

The necessary outfit for the expedition was bought in Sweden and England in the summer of 1932, one item being a Ford car with baggage trailer. Our departure took place in September by one of the Swedish Orient Line boats to Beirut, and from there we went on via Baghdad to Teheran by our own car. The management of the Orient Line were most obliging in the matter of freight, and discounts were allowed by the firms Nordiska Kompaniet and P. U. Bergström. Medical supplies were presented by Mr. W. HAMNER, according to a list made up by dr D. HUMMEL, physician of the Hedin-expedition.

In addition to the writer, the expedition numbered my wife, Mrs IDA ARNE, and two students of archaeology at the Stockholm University College. After making the necessary preparations in Teheran we started at the end of October for the city of Asterabad, which we made our headquarters while getting our bearings among the ancient monuments in that part of the country.

The Turkoman steppes are studded with so-called *tappas* (tepées), mounds of earth built up by the accumulation of ruins of ancient buildings and having also served as burial places. Sherds of old pottery lie strewn about the *tappas*, marking their age. We decided to examine a mound about 16 kilometres NNW of Asterabad (13 km as the crow flies), known as Shah Tepé bouzourg (Shah Tappa, the great royal hill), where we had found sherds of both black-and-red painted and grey-black earthenware and which seemed to be innocent of later Mussulman interments. It is not far from a watercourse, the Karasu, which empties into the Caspian Sea, and at its foot lies the Turkoman village of Qarindjik, where we would be able to purchase produce and perhaps hire labour. The necessary surveys were made, whereafter we returned to Teheran, not without difficulty, for the rainy season had begun early in November, snow fell on the mountain chain of Elbruz, and the precipitous mountain roads were slippery with ice. Actual excavation was impossible during the heavy rains that winter, and furthermore, the concession for Shah Tepé was not finally in order till the beginning of March 1933. Both my male companions had returned to Sweden in December 1932, there being no immediate work for them to do, and it now became of importance to secure reliable helpers. The American Expedition, which was excavating at Damghan under Dr. E. SCHMIDT, returned to Teheran in the early part of 1933, and I was fortunate in securing the assistance of three of its members, the Russians B. DUBENSKIJ, I. GERASSIMOV and M. AMBAROV (the last mentioned now de-

ceased), who undertook the functions of photographer, draughtsman and conservator respectively. A young Austrian engineer, W. SCHWEITZER, was engaged as a cartographer. A young Swede, G. WENER, took part as motor-car expert and assistant supervisor of excavations. My wife took charge of the domestic arrangements, purchases of provisions and the typewriting of catalogues etc. Camp equipment and digging implements were partly taken over from the American expedition, partly purchased at Teheran.

In the beginning of March some of the members of the expedition started for Asterabad, where they were joined by about twenty trained workers and a foreman, HALIL KERBELAI by name, who had worked at Damghan. A house and a garden were hired in Asterabad and a commencement was made with the erection of a house of sun-dried bricks on the Steppe.

In the beginning of April the excavations could be commenced and they were continued till the beginning of July, for the most part with about 100 labourers, principally Persians and a few Turkomans. A Persian inspector, M. KAZEMI, was present all the time. The Governor of Asterabad, M. HASSAN ARFA (now deceased) and the Military Governor in Gumüş Tepé, M. HAKIMI, took a great interest in the work and were most helpful. Their Excellencies the Minister of Court, the Minister of Education and the Minister of Communications had been particularly accomodating, and we had valuable support in M. ANDRÉ GODARD, director of the Service of Antiquities in Iran.

For real help, kindly interest and good advice we have also to thank Mr ANDERS NILSSON, the Swedish consul in Teheran and then director of the Swedish-Persian Company. Thanks are also due to a number of Swedish business men, engineers, military men, doctors and nurses who at that time had occupations in Iran. And finally we have to express our gratitude to the heads of several legations such as Minister VON BLÜCHER and Minister MAUGRAS, Mr WADSWORTH, the American consul, Director KÜHNREICH of the Melli Bank in Asterabad, Professor BARRIÈRE and others.

When a division of the finds made in the course of the excavations had been carried out in the most considerate way in Teheran by a representative of the Iranian Government, the Swedish share was conveyed to Sweden by car and boat through the care of the Swedish-Persian Company. The collections were handed over by the excavation committee, consisting of H. R. H. the CROWN PRINCE, Dr SVEN HEDIN and Consul General LAGRELIUS, as a gift to the Swedish state. They are now preserved in The National Historical Museum in Stockholm.

The cataloguing and description of the material has been made possible by the kindness of the King's Custodian of Antiquities, S. CURMAN, and a grant for the work of preservation, reproduction, fair-copying of maps and cataloguing was made by The Royal Academy of Belles Lettres History and Antiquities. In this

connection Mrs MARGIT BYHLIN-ALTHIN, M. A., Mrs MARGARETA GEDDA-HALLBERG M. A., Mrs BRITA KÄLLSTRÖM M. A., the artist H. FAITH-ELL, NILS LAGERGREN, photographer, and Mr GÖTE MÖLLER have been especially helpful.

For the printing of the present work the committee of the Humanities Fund placed a considerable sum at our disposal. A large part of the translation into English has been performed by Mr DONALD BURTON. The supervision of the printing lay in the hands of dr. G. MONTELL and the arrangement of the tables was performed by dr DAGMAR SELLING.

To all the above-mentioned institutions and persons I beg to convey my heartfelt thanks.

THE TURKOMAN STEPPE AND ITS ANCIENT REMAINS

To the north of the Elbruz mountain-chain and to the east of the south-eastern end of the Caspian Sea stretches an extensive steppe, the Turkoman steppe. Politically, the steppe-region to the south of the river Atrek, together with the adjacent forest-region on the mountain-slopes, belongs to Iran. According to the latest administrative reform in Iran (1937), this region comprises the Gorgan district, a part of »Ostan» (the province) II, which includes also the Teheran district and others.

This area previously belonged to the province of Asterabad, which stretched in the west as far as the district Ashraf and in the east somewhat beyond Gunbad-i-Qabus. In older Islamic time the same steppe and forest region constituted a province under the name of Jurjan (Iranian Gorgan). The province was to some extent dependent on Khorasan; but after the Mongol conquest it was added, politically, to Mazanderan.¹

Two main rivers water the country, namely, the Atrek and the Gorgan (Gurgan). Farther south the little Karasu river flows into the Caspian Sea. Later in the summer this latter stream dries up completely: and as the summer advances the water becomes progressively saltier and ill-tasting. Our workers' water-supply had thus to be replenished daily with water from the River Gorgan, seven kilometers distant from Shah Tepé.

The climate is warm and during the greater part of the year rather moist. At the time of our visit the rainy season commenced in November 1932 and did not come to an end before April 1933. The downpours were so violent that the walls of our house of sun-dried brick were several times washed away before ready. The steppe was soon clad with green and with flowers of various kinds. In April, dandelions and marigolds grew on the Shah Tepé Bouzourg, and in May a sort of thistle with large, beautiful, lilac-coloured flower-heads, the whole plant attaining a height of 5 or 6 feet. The thistles gradually ran to seed, and in July they dried up altogether. In the middle of April Yilghan Tepé bore a luxuriant covering of camomile flowers.

¹ G. LE STRANGE, *The Lands of the Eastern Caliphate*, p. 376.

The rainy season continued, as has been mentioned, until the first part of April, and made the roads over the steppe in the last degree wretched. During the period from April 16th to June 30th we had twenty days with completely or at intervals partly overcast sky, two of these days falling in April, ten in May and eight in June. We had rainfall on April 29th, May 2nd, 7th, 8th, 9th, 10th, 24th, 25th, 26th, and June 15th, 18th, 24th and 30th, thus on thirteen days out of seventy-six. Thunder was observed three times, to wit, on May 9th, June 15th and 23rd, and strong wind or gale on April 15th, May 31st, and June 2nd, 24th, 28th and 29th. The temperature was generally measured at seven o'clock in the morning in the town, but also earlier and later in the day out at Shah Tepé. On April 16th the morning temperature was $+ 10^{\circ}$ C., and with slight oscillations it rose thereafter to $+ 17^{\circ}$ on April 22nd, fell to $+ 15^{\circ}$ on April 23rd but then rose fairly evenly until April 28th, when it reached a maximum of $+ 21^{\circ}$. After this the morning temperature for the period April 29th to May 11th fluctuated between $+ 16^{\circ}$ and $+ 13^{\circ}$, to rise steadily to a new maximum of $+ 21^{\circ}$ on May 16th. After this it fell on a couple of occasions (May 18th and 20th) to 18° , but gradually rose again to $+ 23^{\circ}$ on May 23rd. The temperature then fell during several days (24th—27th May) to $+ 17^{\circ}$, once more rising until May 31st, when it reached 23° . The following ten days (June 1st—10th) it varied between $+ 20^{\circ}$ and $+ 23^{\circ}$ (June 5th), rose on June 11th to over 24° , fell slowly until June 20th, when the temperature was $+ 20^{\circ}$, on June 22nd reached $+ 25^{\circ}$, fell to $+ 21^{\circ}$ on June 25th and then once more to approximately $+ 25^{\circ}$. After storm and rain on July 1st there was another fall of temperature ($+ 21^{\circ}$), but thereafter it rose steadily to $+ 28^{\circ}$ (July 9th).

The temperature at noon was as a rule considerably higher. On April 19th it was $+ 27^{\circ}$, April 24th $+ 28^{\circ}$, on April 26th it was already $+ 34^{\circ}$ by half-past ten and $+ 50^{\circ}$ in the sun. On May 4th the temperature rose to $+ 30^{\circ}$ at two o'clock, but fell on May 7th to 14.5° at half-past eleven. On May 13th the thermometer showed $+ 34^{\circ}$ in the sun at one o'clock. The evening temperature at eight o'clock on the 30th May was $+ 26^{\circ}$ and the weather was stormy during the night. The same thing occurred on June 2nd. On June 15th the indoor temperature at four o'clock was 26.5° . Flying ants appeared in large numbers, and an invasion of grasshoppers commenced that lasted for about ten days. In the middle of June the evening temperature was about 24° . On June 28th the afternoon temperature in the work-room on the steppe was $+ 40^{\circ}$. During the work of excavation the temperature in the sun went up to $+ 50^{\circ}$ and $+ 60^{\circ}$.

One after the other we had invasions of ants, venomous spiders, scorpions and grasshoppers (June 15th). Snakes were rarer, but the long, sturdy zheltopuziks, a sort of legless lizard, were exceedingly numerous.

The available maps of the Asterabad district are rather defective even including

those published by RABINO¹, J. DE MORGAN² and SVEN HEDIN³. According to the scale (1:500,000), the distance on Rabino's map between Asterabad and Tureng-Tepé is nearly thirty kilometers as the crow flies; in point of fact it is eighteen kilometers. On de Morgan's map the great wall Qyzyl-Alan has been inserted too far north of the River Gorgan; and there is reason to suppose that his »Ruines de ville antique« should be shifted not only to the south of Qyzyl Alan but even south of Gorgan. On Sven Hedin's map (founded on the map of A. F. Stahl in »Reiserouten im nördlichen Persien«) Dschordschan (Jurjan) lies about forty kilometers to the north-east of Gunbad-i-Qabus, whereas in reality the Jurjan ruins lie in the vicinity of the tower. For a matter of at least 120 years European travellers have observed the remains of an enormous wall, that under the name of Qyzyl Alan stretches to the north of the river Gorgan more or less in an east-westerly direction. N. VON MURAVIEV, who travelled in these parts in 1819—1820⁴, speaks of this wall, and DE MORGAN and RABINO have inserted it very roughly in their maps. On MELGUNOF's⁵ map it occurs as a range of hills to the north of the River Gorgan. MELGUNOF describes Qyzyl Alan⁶ as follows: »Am rechten Ufer des Gurgan war ehemals eine Mauer, Kisilalan genannt, welche von dem Berge Puscht-i-Kemer, 4 Farsakh vom dem Ursprunge des Gurgan, nahe dem Nomadensitz der Kara-balkan, parallel mit dem Ufer des Flusses bis an das Meer und noch eine Strecke in dieses hinein lief. Die Mauer war aus gebrannten Ziegelsteinen erbaut, ist aber bis auf eine Reihe von Hügeln verschwunden, die sich noch an manchen Stellen 8—10 Fuss über den Boden erheben. Diese Hügel oder Kurgane haben das Ansehen viereckiger Verschanzungen und sind vierzig Minuten Weges von einander entfernt und jeder etwa 150 Schritt lang. Hinter Kisilalan sieht man noch eine andere Reihe von Erhöhungen, welche mit der Hauptmauer parallel laufen; sie sind niedriger als diese und verschwinden an manchen Stellen ganz; zwischen den letzteren führt der Weg hin. Man glaubt, dass alle diese Befestigungen zur Zeit Alexanders des Grossen erbaut wurden und als Schutz gegen die damals am Ufer des Kaspischen Meeres wohnenden Alanen dienen sollten.

An beiden Ufern des Gurgan waren früher Wasserleitungen, die auf einer Brücke über den Fluss geführt waren, und deren Erbauung man ebenfalls dem makedonischen Helden zuschreibt; andere setzen sie in die Zeit des alten Dschordschan.

In Nuzhat-al-Qulub, written by HAMD-ALLĀH MUSTAWFĪ of Qazwin in the year 1340 and translated by G. LE STRANGE (1919) we read (page 106) that »King Firuz

¹ H. L. RABINO, Mázandarán and Astarábád, London 1928 (Gibb Memorial New Series VII).

² J. DE MORGAN, Mission Scientifique en Perse (cartes des rives méridionales de la mer Caspienne, Paris 1895).

³ SVEN HEDIN, Eine Routenaufnahme durch Ostpersien 1918, Karte I, Band II, p. 271.

⁴ N. V. MURAVIEV, Reise durch Turkomannien nach Chiwa, übers. von Strahl, Berlin 1824.

⁵ G. MELGUNOF, Das südliche Ufer des Kaspischen Meeres, Leipzig 1868.

⁶ Ibidem, p. 80.

the Sassanian built a wall on the frontiers of Jurjān to repel the attacks of the Turanians, and it is 50 leagues in length».

RABINO¹ expresses himself as follows concerning the wall: »The famous Sadd-i-Anúsharwán, or Qizil Álán-wall, which was erected by Anúsharwán (531—578 A. D.) to protect the Gurgan valley against invasions by the wild Túránian tribes, Úzbeks, Turkomans etc.»

RABINO adds: »It consisted apparently of a deep moat, behind which was a solid wall of masonry with guard-houses at more or less regular intervals. A low embankment with a mound here and there is all that can now be seen of this formidable rampart which ran from near Gumish-Tappa to Gukcha in the Gúklán country. In some parts there seems to have been an inner moat or canal backed by a second wall (p. 86)».

The wall was observed by ERNST DIEZ during his journey to Khorasan²: »Ca 30 Km westl. von Gunbad stösst die sogenannte Alexandermauer zur Karavanenstrasse und läuft mit dieser nunmehr parallel. Die einstigen Doppelmauern kennzeichnen sich heute als Erdwälle mit zerstreut liegenden Ziegelstücken. Die Ziegelgrösse betrug 29×10×40 cm. In regelmässigen Zwischenräumen Ruinen von Kastellen».

In 1937, the Turkoman Steppe (Dasht-i-Gorgan) was visited by an american geologist, mr Lester S. THOMPSON, who has given the following description of the wall:³ »One of the most striking features of the plain is the ruin of a great wall which extends from under the Caspian Sea near Gumish Tepe to the perpendicular cliffs of the Pishkamir Ridge, 100 miles (160 km) to the east. . . As it exists at present, the wall is a low regular mound which rises at most but ten to thirteen feet (3—4 m) above the level of the plain, and, throughout many stretches, has crumbled to a height of little more than three feet (1 m.). The width is generally about four times the height, except in the lower portions where the bricks are strewn over wider areas. Along the north side of the mound, throughout its entire length, is a ditch roughly six feet (2 m.) deep and twentysix to twentynine feet across. This ditch evidently served the combined purpose of acting as a moat and providing the earth used in building the wall. To the west of Gunbad-i-Qabus, long stretches of the wall are double. . . Although there are several angle points, the wall between them was laid out along straight lines with mathematical precision. — At a few places there are vestiges of fortified gates. Many of the angle-points were protected by citadels, some of which were apparently of good size. As far as actual remains are concerned, the building material was fired brick. Large bricks seem to have been the rule in most of the buildings. In the wall itself, some

¹ H. L. RABINO, Mázanderán and Astarábád, 1928, p. 15.

² ERNST DIEZ, Churasanische Baudenkmäler I, 1918, p. 11.

³ LESTER S. THOMPSON, Geological evidence for ancient civilisation on the Gurgan plain (Bull. of the American Institute f. iranian art and archaeol., V, 3, 1938).

of them are, for bricks, of gigantic proportions, the largest actually measured being $23\frac{1}{2} \times 10 \times 4$ inches ($60 \times 25 \times 10$ cm.). Imprints within the bricks show that straw was used in their manufacture. — It is probable that the kilnfired brick was used only as a facing, the core of the wall having been either sun dried brick, since disintegrated, or simply earth tamped in ».

Mr THOMPSON then gives an approximation of the age necessary for the affluents of the river Gorgan to carve out the valleys in the loess — »a very long time indeed» — and adds:

»The same physiographic features have a bearing on the probable age of the Qizil Alan. In view of the fact that this wall was so well fortified at its gates and at the angle points, it seems incredible that dead ends at places where it crossed a deep chasm would have been left unprotected. Yet no ruins of such fortifications were to be seen where the wall meets the valleys of the Sar su and the Yela Aji. The inference is that the wall also was probably built before the present valleys were carved out, and hence is a very ancient monument ».

Eventually he adds: »From the geological evidence, it is safe to say that some of these monuments date back to the remote past — probably not less than six thousand and possibly as much as ten thousand years ago». Probably, Mr THOMPSON is of the opinion that Qyzyl Alan belongs to this old monuments, because he adds: »The fact that, in localities where there is an abundance of stone for building material, they used brick of most excellent quality, may be taken to mean that they had probably developed a degree of culture before they migrated to this area ».

To me, this utterance is not easily to be understood. In the loess area of the Gorgan plain there is rather a lack of stone and no abundance. In the tepés as in the wall, burnt bricks are probably not used before the christian aera and there are no finds that can be dated back earlier than about 3000 B. C.

It should here be added that J. DE MORGAN¹ considered that the Turkoman steppe was formed during an epoch when the Caspian Sea stood at a higher level than it does now, and its waves in places washed the foot of Mount Elbruz. The mountain-rivers, according to de Morgan, bore masses of stone, gravel and sand. The coarser material stopped at the foot of the mountain, while the finer material was carried slowly out over the shallow flooded area and deposited there. Afterwards, the surface of the Caspian Sea sank, probably some meters; the rivers took the course of their later beds and the steppe was formed with its almost completely horizontal surface.

LESTER THOMPSON,² on the other hand, is of opinion, and probably with greater reason, that the Turkoman steppe arose through the accumulation by the wind of layers of loess of unknown depth from pleistocene to recent times. »The greatest thickness of this remarkable wind-blown deposit actually measured during

¹ J. DE MORGAN, *Mission scientifique en Perse, I, Etudes géographiques*, Paris 1894, p. 86.

² L. THOMPSON, *Op. cit.*, p. 194.

the course of the present investigations was 262 feet (80 m.).» »Rising from the Caspian shore in a few low beach terraces, the plain extends eastward with almost unbroken monotony for some sixty miles (nearly 100 km.), when on the north, it merges into a region of low rolling hills. The slope of the plain over this western portion is only 4 in 10,000. From Gunbad-i-Qabus eastward, the rise, although imperceptible to the eye, is actually ten times as great, being 4 in 1,000. Over this latter portion, the plain proper is restricted to the valley of the Gorgan River. It tapers rather sharply and finally terminates in the small mountains thirty miles (50 km.) east of Gunbad.»

Of the Qyzyl Alan wall there are still considerable remains; and I had received the permission of the Iranian Government to make a trial excavation in the same to endeavour to ascertain its age. Unfortunately we did not have time to make this investigation. In connection with the mapping of the steppe region that was performed by my assistant Mr W. Schweitzer, the wall was, however, inserted on the map to a length of about 70 km., beginning 4 to 5 km. to the west of Gunbad-i-Qabus and stretching westwards towards the Caspian Sea. Over a length of more than 30 km., however, the wall is seen to be interrupted; and not until a point just to the north of Gumüş-Tepé, a couple of km. from the shore, does one once more see elevations that have been supposed to be the continuation of Qyzyl-Alan. The wall was at least in part built of burnt bricks. In places the wall-remains attain a breadth of 20 m. and more and a height of from 1 to 3 m. One observes at times a single ridge, sometimes as many as 3 or 4 parallel ridges, of which at least the third, reckoned from the north, is built of brick (Pl. I, Fig. 1). Square look-out stations at a distance of from 1.5 to 7 km. from one another had been erected. 18 of these are marked on the map (*K* = Kala, stronghold). These stations consist of brick walls, 1.5—6 m. in height, at present in ruins, and enclosing an inner courtyard. The sides of the foundations generally have a length varying generally between 80 and 160 m. As a rule they are situated on the south side of the wall.

Just where the wall begins in the east lies a tepé, Karaul tepé, 10 m. in height, to which in the south is attached a square look-out station with a ground-area of 150×180 m. For the following stations we have a number of measurements: *K* 1, height approx. 1.50 m.; *K* 2, height approx. 2 m., diam. 150×160 m.; *K* 3, height approx. 3 m., diam. 160×160 m.; *K* 4, diam. 150×120 m.; *K* 5, height approx. 3 m.; *K* 6, height approx. 4 m., diam. 80×80 m.; *K* 7, diam. approx. 100 m.; *K* 8, height approx. 2.5 m., diam. approx. 100 m.; *K* 9, height approx. 2 m., diam. approx. 80 m.; *K* 10, height approx. 5 m., diam. approx. 100 m.; *K* 11, height approx. 1.5 m., diam. approx. 70 m.; *K* 12, height approx. 5 m., diam. 100×120 m.; *K* 13, height approx. 6 m.; *K* 14, diam. approx. 40 m.; *K* a, height 2 m., diam. approx. 40 m.; *K* b, height approx. 2.5 m., diam. 120 m.; *K* c, height 3 m., diam. approx. 130 m.

While broken pottery was commonly observed on the tepés, practically none was seen, and least of all any Sassanian pottery, in Qyzyl-Alan except at the westernmost point near Gumüş Tepé. The brick, on the other hand, seemed to be of the same kind as that which was found in the early Mussulman layer in Shah Tepé. There is thus not yet any archaeological proof that this wall goes back to Anūšīrvān's time, the 6th century.¹

Some little distance to the north of the place where the River Gorgan disembogues in the Caspian Sea and a couple of kilometers from the latter lies the village Gumüş Tepé (The Silver Hill). Just to the north of the village there are various remains from ancient times, traces of brick buildings and brick-built graves, largely destroyed, as bricks have been taken therefrom for the erection of modern buildings. Melgunov² writes as follows about the place: »Nach Murawiefs Beschreibung ist der Silberhügel eine 100 Klaftern lange und zwei Klaftern hohe, von gebrannten Ziegeln erbaute Mauer, die an der östlichen Seite, der Steppe zu, mit Sand verschüttet ist und daher wie ein Hügel erscheint. Herr Murawief selbst hat in dieser Mauer menschliche Ueberreste gesehen. Man vermuthet, dass hier die Hauptfestung der *Kizil Alan* lag. Der Hügel bildete früher eine Insel. Auf dem Vorgebirge, welches sich früher 70 Klaftern weit in das Meer erstreckte, sah man auch die Ueberreste von Mauern, Häusern und runden, aus grossen, viereckigen Ziegelsteinen erbauten Thürmen, etwa 30—40 Klaftern vom Ufer, auf dem Meeresgrunde; in den Ruinen hat man jedoch, ausser Glasscherben, nichts gefunden. Die Mauern und Thürme ragen nicht hervor, und sind wahrscheinlich durch ein Erdbeben zerstört worden.»

What astonishes one in this 120 year-old description is the particulars about the ruins that extend into the sea. From the height to the north of Gumüş Tepé I could see nothing but plain, nearest the sea marshy land.

Near the old tepé may be seen the remains of an embankment, approximately 3—5 m. above the sea. Whether this was thrown up by human hands or not, it has in any case been exposed to flooding from the sea. The small stones therein have been rolled and polished by water, but not only these — for this might have happened during a much earlier epoch — but also the numerous fragments of early Mussulman glazed and unglazed pottery that were found in the embankment. The glazing is for the most part of a green kind that I presume is the same as that one sees on fragments of clay vessels from Shah Tepé.

Similar pottery but not rolled was also found in the tepé itself. At the foot of the latter were seen Mussulman graves constructed of bricks. The roofs of the graves were often covered with real layers of shells. Everything indicates that the foot of the tepé has been more or less flooded by the surrounding sea. Such a flood is also mentioned by older Persian writers, such as Mustawfi. According

¹ Cf. T. J. ARNE, *La steppe turkomane et ses antiquités* (Geografiska annaler 1935).

² G. MELGUNOV, *Op. cit.* p. 85.

to these writers, Amu Darya (the Oxus) is supposed to have changed its course some time after the Mongol invasion in the 13th century, taking its way to the Caspian Sea instead of to the Aral Sea into which it formerly (and later) disembogued.¹ At the end of the 16th century it is supposed to have returned to its old bed. Through the addition of Amu Darya's waters the Caspian Sea seems to have risen several meters and caused floods.

Gumüş-tepé, however, was an island in the year 1782, when the place was visited by the Russian captain, Count VOINOVIC; and according to information given by an old Turkoman to MURAVIEV, it was still an island about 1813.² The surface of the water gradually sank thereafter, but in 1819 it was still perhaps higher than in 1836. The surface of the Caspian Sea has evidently within historic time undergone several changes of level. It is supposed to have begun to rise again in 1833—34, according to the scientific reports of KARELIN and FELKNER.³ The former also observed (1836) the remains of the foundations of towers on the sea-bottom near Gumüş-tepé, and along the coast down towards the mouth of the Kara-Su an almost unbroken row of ruins of brick buildings, nearly 30 versts in length.

It has been supposed that Ābaskūn, the port of the mediaeval city of Gorgan, that was reached after three days' journey westwards, was situated not far from the mouth of the river Gorgan. BARTOLD guesses that »it is possibly the island now known as Ashur-Ade«.⁴ It seems to me to be more likely that Ābaskūn should be identified with Gumüş-tepé, with its wealth of ruins. A closer acquaintance with Ābaskūn, Gorgan and Qyzyl Alan, however, is only possible through archaeological excavations, and this applies in general to the history of the Turkoman steppe during older Mussulman time and previous epochs.

The whole of the Turkoman steppe is dotted with huge earth-mounds (tepés), comprising the remains of ancient settlements. J. DE MORGAN has marked on his map⁵ 43 tepés mentioned by name, 32 of which are situated south of the river Gorgan, that is to say in the region where the Swedish expedition received special permission to carry on the work of excavation. (This region was for the time being bounded in the south by the river Karasu.) (Fig. 2. De Morgans map).

In vice-consul H. L. RABINO's report of the year 1909 concerning the trade and general conditions of the city and province of Asterabad⁶ no fewer than 37

¹ Cf. G. LE STRANGE, *The Lands of the Eastern Caliphate* (1905), pp. 448, 455 and 456—58. V. BARTOLD, *K istorii orošenija Turkestana* (1914), pp. 25, 34, 89, 91, 93. BARTOLD, in *Enzyklopädie des Islam* (art. Āmu Dāryā). F. MACHATSCHKE, *Landeskunde von Russisch Turkestan*, 1921, p. 313. MASALJSKIJ, *Turkestanskij Kraj*, p. 121 (Rossija XIX).

² *Turkmenija I*, pubd. by Akademija Nauk 1929, pp. 88, 92.

³ *Turkmenija I*, pp. 101, 104.

⁴ W. BARTOLD, *Turkestan down to the Mongol Invasion*, 1928, p. 426.

⁵ J. DE MORGAN, *Mission scientifique en Perse; Carte des rives méridionales de la mer Caspienne; T. IV, Recherches archéologiques I*, Paris 1896, pp. 128 et seq.

⁶ H. L. RABINO, *Report on the Trade and General Conditions of the City and Province of Asterabad* (No. 4381 Annual Series. Diplomatic and consular reports 1909).

which connection he observed or heard mention of a number of tepés in the neighbourhood of Gunbad-i-Qabús and nearer to Asterabad. To identify these — Aqnáwur, Nur, Tandurli, Allahkarak, Yás, Sangurli, Pir Mohammed, Rustam, Bibi-Raushan, Sultan Duvin, Daurelar, Gundul, Yáqúb Payghambar, Aqza Kálám, Fúgird, Shigaltappa, Bajtappa, Gultappa, Qaráwáytappa — is not always, though generally, possible. A number of the villages mentioned by RABINO in the districts of Sadan-Rustaq and Asterabad-Rustaq are situated near known tepés or else their names indicate that there must be a tepé there.¹

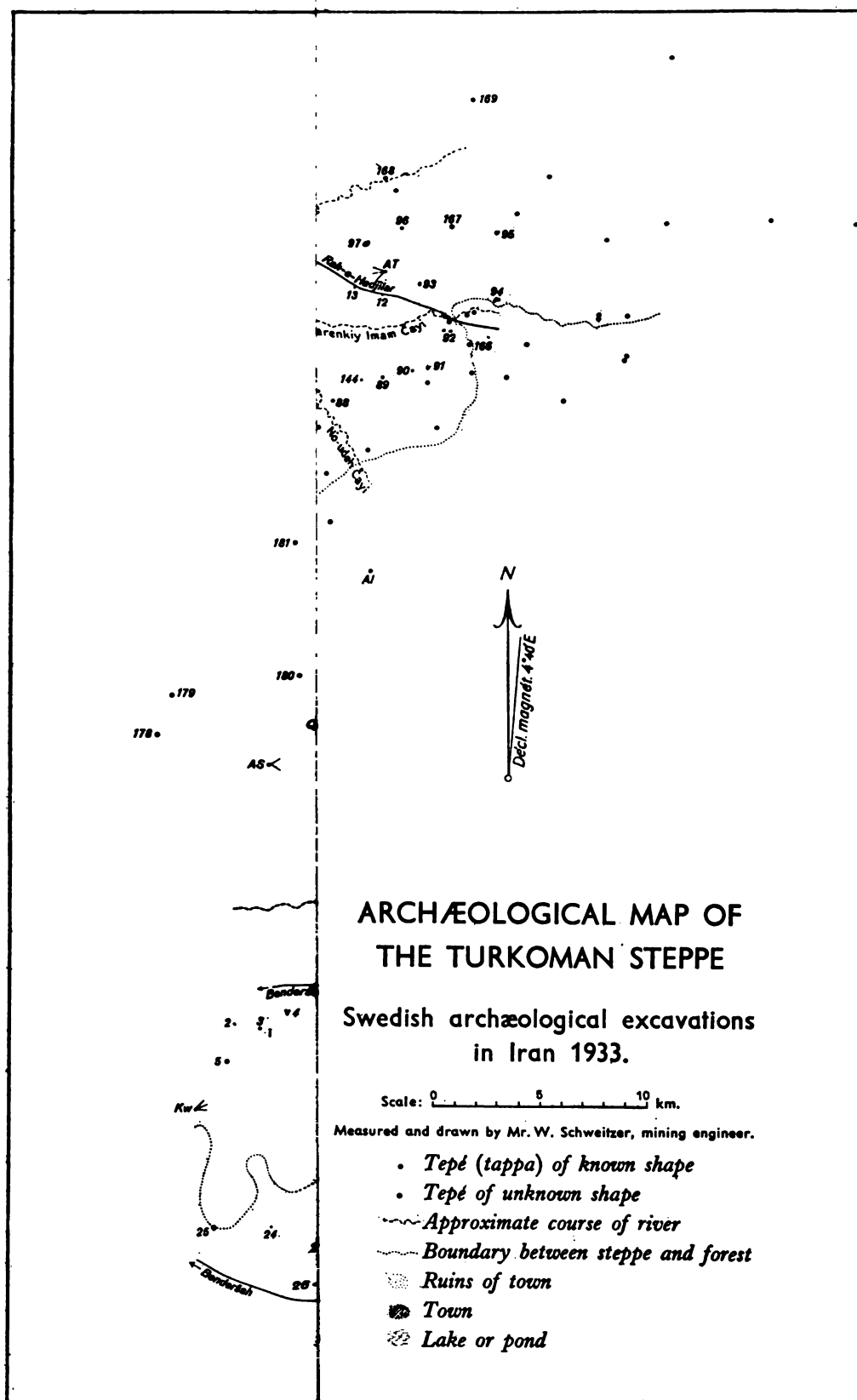
It soon proved necessary to a certain extent to chart all the ancient remains within the region of our concession, or rather, option between Gorgan and Karasu, and where feasible some distance beyond these boundaries. This work was entrusted to WALTER SCHWEITZER, a mining engineer. Mr SCHWEITZER was a skilful cartographer who also spoke the Ottoman-Turkish language, which the Turkomans understand. Through the kindness of the Iranian Ministry of Transport and Mr M. LINDAHL, the Swedish superintendent engineer at the railway that was in course of construction I managed to loan a theodolite. This enabled a comprehensive triangulation, which was carried out with short interruptions from the end of March to the end of June 1933. The calculations and maps were ready by the beginning of August.

The aim of the mapping was chiefly to mark the ancient remains visible on the surface of the ground. It would, of course, have been desirable to mark in on the map all river-courses, roads, old irrigation-canals, present-day villages and tent-settlements, and to extend the mapping in the north as far as the river Atrek. But as this would have required additional work for several months and corresponding costs it was this time not feasible.

The map, drawn to a scale of 1:100,000,² extends over a region from west to east of approximately 110 kilometres in length and a breadth from north to south varying between 35—40 and 10—15 kilometres (Fig. 3, Map). The mapped area measures at the most 2,500 square kilometres. In the westernmost part of the steppe there are scarcely any tumuli, and the map therefore begins about 15 kilometres to the east of the Caspian Sea. To the north, unfortunately, it stretches to only slightly beyond Qyzyl Alan, and does not extend as far as Gumüş Tepé. The common route over the steppe from Asterabad to Gunbad-i-Qabus is marked in. Aq-Qale (now Pahlavi Deh) can, however, be reached by a more easterly route, starting from the northern town-gate in Asterabad (now re-christened to Gorgan). The river Gorgan is marked in as well as some of its tributaries, as is also a short stretch of the Karasu, which disembogues in the Caspian Sea. It has not been possible to reproduce exactly all the windings of the rivers; this would have

¹ H. L. RABINO, *Mázanderán and Asterábád*, 1928 (Gibb Memorial, New series VII).

² Published to the scale of 1:300,000 in: T. J. ARNE, *La steppe turkomane et ses antiquités* (Geografiska annaler 1935, Festskrift till Sven Hedin).



taken too long a time. The boundary in the south between steppe and forest has been marked by a pricked line. Unfortunately some tepés in this forest-belt just to the north and north-east of Asterabad are missing.

If one counts the tepés Qala Khandan tepé and Qala Kuhneh tepé (in the eastern city-wall), both of which belong to Asterabad itself, there are on the map at least 35 *tepés* situated within the forest-region. The number of smaller tepés there is certainly greater, but they are difficult to sight in connection with a triangulation and have therefore been omitted. To this group belongs also the unmarked Khargoush-tepé, situated three kilometers to the north-east of Asterabad, where J. de Morgan began an excavation.

On the steppe-region up as far as the river Gorgan and to the west of the highway from Asterabad to Aq Qale — Pahlavi Deh 24 *larger tepés* and some smaller tumuli resembling burial-mounds have been observed.

To the north of Gorgan and west of the great bend of Qyzyl Alan and beyond this wall 31 *tepés* have been included, one of which is double and another triple.

Farther to the east, to the north of Gorgan, may be seen a further 16 *tepés*. Between Gorgan in the north and the forest-region in the south, as well as to the east of the road Asterabad — Pahlavi Deh as far as the river Kariyab, a tributary of the Gorgan, 65 *tepés* have been marked in (apart from the two tepés 34 and 135 to the south of Karasu).

Between Kariyab and its tributary Karasu lie 19 *tepés*. To the east of the tributaries Karasu-Kariyab and to the south of the Gorgan as far as the latter's tributary Noudehçayi 78 *tepés* have been included, several being double.

And finally, to the south of the Gorgan and east of the Noudehçayi are situated 35 *tepés*.

In all, 303 tepés have thus been included in the map, but a number of them are double; and in addition there are several smaller mounds, possibly burial-mounds. Within the mapped area one may definitely reckon with about 310 tepés as well as smaller mounds.

Mr SCHWEITZER was accompanied on his journeys over the steppe by a Turkoman soldier and generally also by a Turkoman servant. From these and from the Turkomans with whom he stayed he learned the Turkoman names of the tepés. These names have been reproduced as far as possible according to the pronunciation. In a number of cases the tepés bear Persian names (especially in or near the forest-belt); and double names are probably not out of the question. Some tepés have no name at all. Frequently a tepé is referred to simply as Qala or Qaladjik, (the little) castle. The word »tepé» is pronounced by the Turkomans »defé». There are in the Turkoman dialect equivalents for both voiced and voiceless English *th*. The equivalent in Persian pronunciation of the voiceless *th* (p) is s.

About half the number of tepés (155) have been sketched in horizontal plane

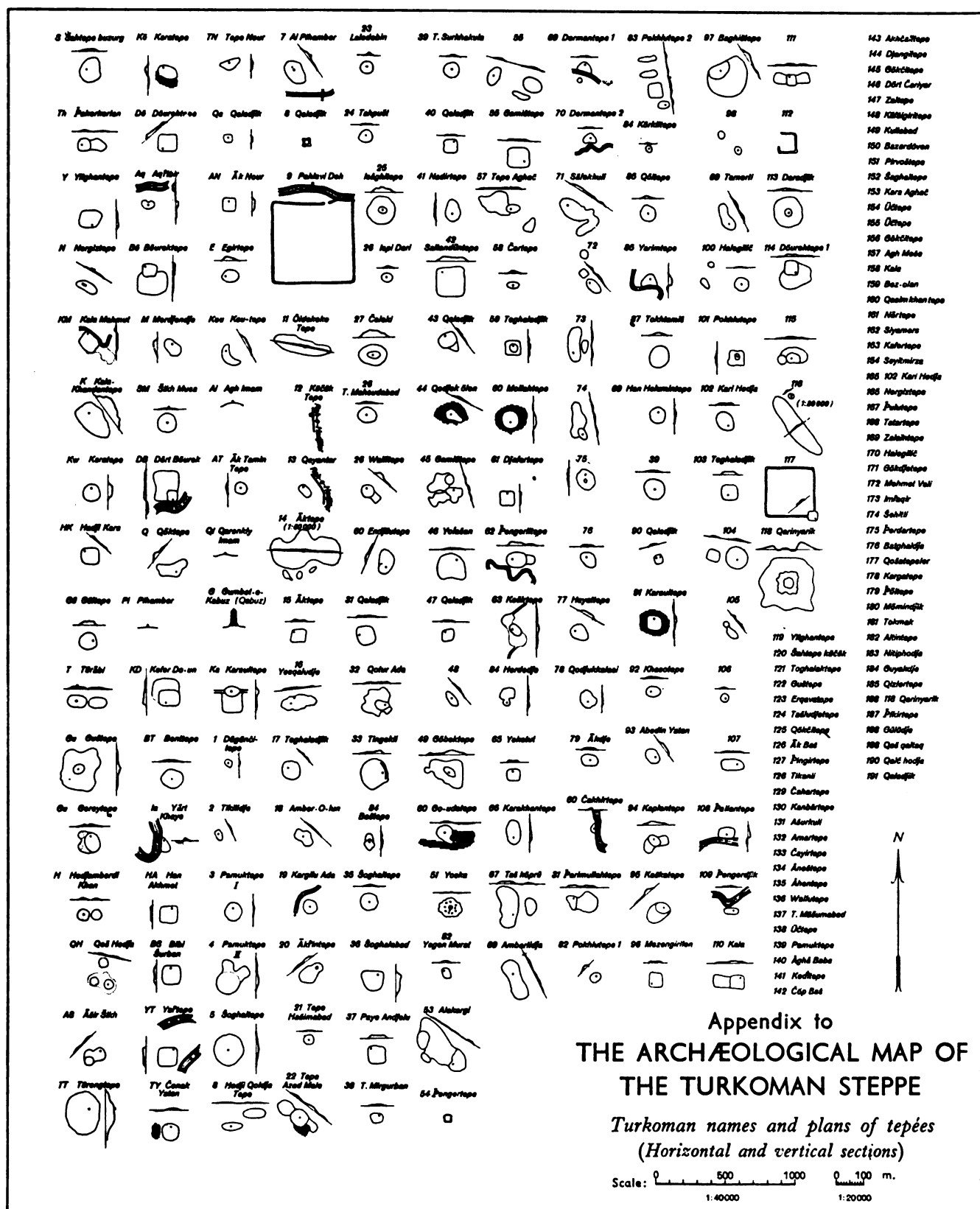


Fig. 4

and in profile, and the approximate height of at least as many has also been given. (Fig. 4). The width of about 135 tepés has been given and in many cases both length and breadth. On about 90 mounds potsherds were observed, and as a rule these were collected and taken away.

Four, possibly five of the tepés measure at least 20 metres in height. These are *Qala Khandan*, (Fig. 5), outside the south-western corner of the city of Asterabad (approx. 40 metres), probably *Qala Kuhnéh* near the eastern wall of the city, *Tureng Tepé* (31 m.), *Čeleki Tepé* (25 m.), *Šoghalabad Tepé* (20 m.). All are situated in the forest-region near the foot of the Elbruz Mountain. *Qala Khandan* measures 300×220 m., *Tureng Tepé* approximately 120×130 m., (Pl. I,

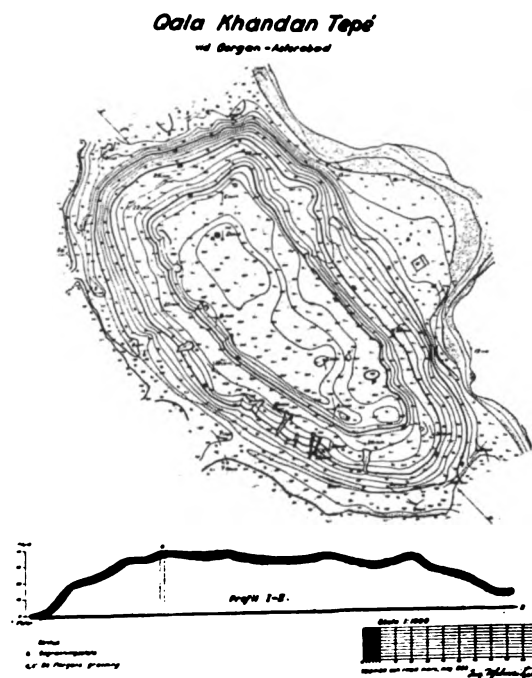


Fig. 5

Fig. 6), the dimensions of *Čeleki Tepé* probably correspond to those of the latter, *Šoghalabad* measures about 150 m. in diameter. *Qala Khandan* and *Čeleki Tepé* have a terrace-like structure. The former has been fortified in recent times.¹

Four other tepés measure from 15 to 17 metres. *Isaghi Tepé* is 17 m. in diameter, and *Walli Tepé*, *Saltandūn* (or Sultan Duvin) *Tepé* and *Yarim Tepé* each measure 15 metres. The two first-mentioned lie in the forestbelt, the two latter on the steppe, though no more than 4 to 5 km. from the edge of the forest. Both *Isaghi Tepé* and *Walli Tepé* have terrace-formation. Four hundred metres to the north-west of *Saltandūn Tepé* there is a smaller tepé with a height of 6 metres.

Twenty tepés reach a height of 10 to 14 metres. *Göbek Tepé* is 14 metres in height, *Toghaladjik* (103) and *Kaška Tepé* 13 m., *Payé Andjelu*, *Sangerli* (pengerli), *Tašköprü*, *Kaplan Tepé*, *Baghiš Tepé*, *Döureh Tepé*, *Qarinyarik* and *Karakhan Tepé* 12 metres, *Aq Tepé I* and *Aq Tepé II*, *Endjilu Tepé* and *Tepé Surkhakula* 11 metres, and finally *Tingekli*, *Karaul Tepé*, *Hayat Tepé*, *Daradjik* and No. 116 each 10 metres. Three smaller mounds are situated near *Göbek Tepé*.

If we look for these tepés on the map, we find five of them in the forest-belt or at the edge of the same, namely, *Göbek Tepé*, *Payé Andjelu*, *Tepé Surkhakula*, *Endjilu* and *Hayat Tepé*. The others lie on the steppe: seven near the road from Asterabad to Gunbad-i-Qabus, three to the east of this community, three

¹ MELGUNOF, Op. cit. p. 105.

near the Kariyab's tributary, Karasu, and finally, Qarinyarik and No. 116 somewhat south of the western part of Qyzyl Alan.

Seventy-five tepés measure between 5 and 9 meters in height, and of this number 23 measure at least 8 meters. Finally we find *fifty-five* tepés only reaching a height of approximately 1—4.5 metres.

Among the unmeasured tepés, especially outside Qyzyl Alan, there are probably a number with fairly considerable dimensions. Though as far as the height is concerned, it would appear that the chief tepés are to be found within or near the forest-belt. Finds of numerous potsherds, including some red ones with painted black ornamentation, make it probable that these tepés are among the oldest. That they have grown so high may be due to the fact that after the steppe-tepés in general — as I believe in the first half of the second millennium B. C. — were depopulated these forest-tepés were longer able to keep their old population or else they were sooner repopulated than certain others. With its masses of bricks and its lack of graves, the great mound at Tureng Tepé (mound A) gives the impression of having at least in part arisen later than the west mound (mound C) which is filled with graves.¹ In its more deeply lying still unexcavated parts, however, it is perhaps as old as or older than mound C.

The form of the tepés in the horizontal plane varies quite considerably. Some are round, others more narrowly oval, a number are quadrilateral, square or rectangular. Sometimes several tepés are as it were conjoined, one round with another oval or quadrilateral. Some are quite irregular.

Five of these ancient remains are not tepés in the strict sense, but consist of ramparts arranged in a square. These are certainly fortifications from relatively late, Persian times, possibly situated near or on insignificant tepés. Chief among these fortifications is Aq Qale, now Pahlavi Deh, on the river Gorgan. Here, on the south bank of the river opposite a beautiful bridge, built perhaps already in the fourteenth century,² may be seen a square rampart of earth. Each side measures (according to Schweitzer) approximately 600 metres in length.³ The breadth of the rampart is at the base about 8 metres, the height being about 6 metres. In the north-eastern corner, both inside and outside the wall, may be seen modern guard-houses of unburnt brick. There is still a military station here. Inside the square there are several heaps of ruins. RABINO⁴ states that Aq Qale was built in the time of Shah Nasreddin to keep watch over the Turkoman region, but that the soldiers who were posted here were practically prisoners within the walls and could not even maintain the connection with Asterabad.

¹ Supplement to the Bulletin of the American Institute for Persian Art and Archaeology, Vol. 2, No. 1 bis, March 1932.

² A Survey of Persian Art, Vol. IV, Pl. 491 B.

³ On the strength of pacing I myself would estimate the length of the sides as nearly 800 metres.

⁴ RABINO, Mazánderán and Astárabád, London 1928.

Other quadrilateral fortifications are No. 8 Qaladjik, No. 54 Penger Tepé and Nos. 112 and 117. The first is quite small, only 40×40 metres, and is provided with a rampart 3 metres in height. No. 112 has 4 metres-high ramparts of 130 metres in length. One side is largely open. No. 117 has a square rampart with a side of 400 metres. In one of the corners there is a square elevation, seven metres in height. Penger Tepé has a 3 metres-high rampart; the sides measure 50 metres each. In none of these fortifications have older potsherds been found.

In many places on the steppe traces of earlier irrigation-canals were observed. It is not out of the question that the steppe-lakes shown in the centre of the map, to the south of Bibi-Šurban, were originally artificially dug ponds. Mr PAUL SEWALD, an engineer and a resident of Asterabad who has interested himself in the watering conditions and the older settlement of the steppe, has, moreover, made observations that in his opinion point to an earlier deliberate regulation of the course of the Gorgan.

To the south of Qyzyl Alan may be seen the remains of three considerable town-foundations from older Mussulman time. Farthest to the east, south of Gunbad-i-Qabus, lie the ruins of the town of Djurdjan. In many places may be seen brick vaults and large quantities of older glazed pottery. The town was of considerable size and was probably the place about which IBN HORDADBEH relates that it was visited by »Rus» who arrived here with their wares, accompanied by Slav interpreters. It is possible, however, that »Rus» did not come farther than to Ābasgūn, the port of Djurdjan. On one occasion I was offered fragments of silver ornaments that were stated to be found in Djurdjan's ruins. One fragment was ornamented with filigree, a kind of continuous figure-eight that is also found in the ornamentation of silver objects from Eastern Europe in the time of the Vikings.

Bibi-Šurban (Bibi-Sharwan), immediately to the south of the River Gorgan, is mentioned by RABINO,¹ who says that it is a hill situated about 4 English miles W. N. W. of Gunbad-i-Qábús, and bears the name of Nuširwan's wife. The tepé itself is square in shape with rounded corners. The town-area seems to have been fairly considerable, and stretches in the south as far as one of the steppe-lakes.²

Still farther west, to the south of the river Gorgan and the two tepés Yart Khayé and Han Akhmet, lies, finally, a region of ruins that is marked on the map although it was not closely surveyed. It is possibly a Mohammedan town.

Here and there on the steppe lie single small mounds or groups of mounds. These are perhaps to be regarded as burial-mounds. Quite near to Yilghan tepé lies such a group of three mounds (on the map, No. 119, II). After an exchange of telegrams with the Ministry of Education in Teheran I received permission to investigate one of these, a round mound. (Pl. I Fig. 7). I had thought of the

¹ RABINO, Op. cit., p. 87.

² Also MELGUNOF (Das südl. Ufer des Kasp. Meeres, p. 80) mentions these town-ruins as well as six others.

possibility of here finding a grave from, for example, Scythian times; but I found nothing. The bottom layer was somewhat mixed with lime. Some Turkomans who happened to come riding up on horseback informed me that such mounds were formerly thrown up to the memory of persons who were killed on the steppe, and that lime was first strewn on the place. The mounds would thus be, at least in a number of cases, cenotaph-graves.

Thirteen groups of such mounds are given on the map, marked with Roman numerals.

Immediately to the south of Pamuk Tepé I (3) there lies a similar mound (I). No. III, a single mound, is situated just to the south-west of Yilghan Tepé. A group of three mounds (No. II) lies E. S. E. of Yilghan Tepé and east of Yilghan Tepé I (II9). The largest of these, being the one mentioned above, that I investigated, measured 1.6 m. in height. 12 m. from this mound, in a south-westerly direction, lies another mound. This has a height of 1 m. West of the first mound there is also a tumulus with a height of 1.4 m.

Burial-mound IV, situated south-west of Pahlavi Deh, south of Toghalak Tepé, measures 1.3 m. in height and 7.0 m. in diameter.

Probably near Qök Tepé lie two mounds. The more northerly one is 4.0, the more southerly one 5.0 m. in diameter. They are situated about 40 m. from each other west of an old river-bed. They are not given on the map.

To the south-east of the Qyzyl Alan station No. 14 lie two tumuli (No. V) at a distance of 600 m. from each other and on the east side of the road. Both measure approximately 5.0 m. in diameter and 1.5 m. in height.

To the south-east of 43 Qaladijk lie five tumuli (VI). They have the following measurements: 1) Height 1.5; diameter 5.0 m. 2) Height 0.8; diameter 3.5 m. 3) Height 0.7; diameter 3.0 m. 4) Height 1.2; diameter 4.0 m. 5) Height 0.9 diameter 3.0. The mounds are grouped about No. 1, which is the largest. Farther to the south-east lies an isolated mound (VII). This measures 1.2 m. in height and 4.0 m. in diameter.

Farther east, a couple of kilometres eastwards of Üç Tepé there are 3 groups of tumuli. The first group, to the north, (No. X) comprises 7 or 8 mounds with heights varying between 0.4 and 1.5 m. and with diameters of up to 5.0 m. To the south of Yegen Murat Tepé lies a tumulus (No. VIII), and still farther south three more (No. IX).

Tumulus No. XI is seen east of No. 67 Herdedjé Tepé.

And finally, we find a group of 6 tumuli near and to the south of the river Gorgan and north-east of Dört Böurek (XII), while to the south of Aqibir and not far from the Gorgan there is a further group of 3 (XIII) with a height of about 1.0 m.

Thus, the sites of in all 35 smaller tumuli are given in the map.

I have already mentioned that in the year 1890 de Morgan undertook a smaller excavation in Khargoush Tepé north-east of Asterabad.¹ Another, rather more comprehensive investigation was carried out in 1931 by an American expedition under the leadership of Dr WULSIN in Tureng Tepé, 18 kilometers north-east of Asterabad as the crow flies.² I myself now had an opportunity for three and a half months in 1933 to excavate parts of Shah Tepé, situated 13 kilometers N. N. W. of Asterabad as the crow flies, or 16 km. by road. The distance between Shah Tepé and Tureng Tepé is only 21 kilometers as the crow flies.

Of the measured tepés (half of those marked on the map) there are 27 that exceed Shah Tepé in size. Eight measure about 200 m. in length, one 220 m., one 240 m., three 250 m., four over 300 m., two 400 m., one 600 m., one 800 m., one 1000 m. and two 1500 m. None of these, however, exceeds 200 m. in breadth, but 14 are as high as or higher than Shah Tepé, up to 17 m. The lowest is 3.5 m. Eleven tepés measure 150 to 160 m. in length with a lowest height of 3 m., while five are over 11 m. Sixteen tepés have a greatest diameter of 110 to 140 m., 63 vary between 70 and 100 m., 18 are smaller, of which number 12 are 50—60 m. Within the largest group, that with 63 tepés, 7 reach a height of over 8 m.

In my view nearly all the tepés on the Turkoman steppe offer the same picture of the communities that grew up in the course of several centuries, and where the dead were buried under the floors of the houses themselves. The walls have been demolished — perhaps deliberately — and new houses have been erected on the sites of the old. If, then, my view is correct, then one must assume that every tepé contains great numbers of skeletons, probably in about the same proportion as in Shah Tepé — approximately one skeleton per 22 to 23 cubic meters. It should not be forgotten, however, that Dr WULSIN did not find any skeletons in the great Tureng Tepé, though he did find skeletons in a smaller adjacent mound. DE MORGAN, on the other hand, found a large number of skeletons in the course of his little excavation, even as deep as 3 metres under the base of the mound.

As has already been mentioned, potsherds were collected from a large number of the tepés on the Turkoman steppe. In about 80 were found fragments of prehistoric black or grey pottery. In a dozen cases these were ornamented with knobs, ridges or grooves, a mode of decoration that characterizes an earlier epoch than the burnished ornamentation observed on sherds from about ten other tepés. So-called red polished ware, which in Shah Tepé is relatively rare and which in the main belongs to the later copper age, was collected in about 50 tepés, in 40 along with the black or grey sherds. As it happens, however, we have red polished ware also from Mussulman time, and it is almost impossible to distinguish this from the older, prehistoric ware when only small fragments are available. In about ten cases,

¹ J. DE MORGAN, *Mission scientifique en Perse IV, Recherches archéologiques*, Paris 1896.

² WULSIN, *Excavations at Tureng tepé near Asterabad* (Supplement to the Bulletin of the American Institute for Persian Art and Archeology) March 1932.

where handles or the necks of vessels were preserved, it is possible to assume Mussulman manufacture with certainty, and perhaps the same may be assumed in connection with a number of the other 50 finding-places.

It is also difficult in certain cases to determine the age of the coarse ware that was found in at least 46 tepés. The coarser, unornamented ware that derives from kettles and other cooking utensils is undoubtedly prehistoric and was found in 32 tepés together with black, grey or red pottery. But there is another coarse ware, thinner and better burnt, although it is not without admixture of grains of quartz. It is often ornamented with grooves, and between these transverse ribs. In at least a number of cases I think this pottery must be Mussulman.

The prehistoric pottery that is characterized by red slip upon which is painted black, geometric ornamentation is known from about 20 tepés. Besides in Shah Tepé it has been found in Nos. 4, 8, 35, 39, 41, 52, 62, 65, 66, 80, 83, 86, 88, 93, 94, 97, 125, in DK 1, K. D., Gumüştepé, Tureng tepé and Hadji Kara (Aga) tepé. That this pottery, that characterizes the oldest period, is scarcer is undoubtedly due to the fact that being situated in the bottom part of the tepés it was less often dug up or washed up to the surface by the rain.

From at least ten tepés we have a thin, well-burnt type of pottery, often deriving from small dishes or plates. This shows a red, generally profiled rim-part, and often and sharply delimited against this a continuation both inside and outside in grey, varying between light pinkish grey and a greyish blackness, perhaps a trifle flamy. Presumably this pottery, like other ceramic of the copper age, is hand-made; but it is possible that it is turned and derives from a later date, for instance, a more developed bronze age.

The Mussulman pottery that can immediately be recognized as such is that which has been provided with painting and glazing. Such pottery was collected from at least 16 tepés and it has of course been turned on a potter's wheel. Also turned on a wheel are a number of grey, yellow or red fragments from about 30 tepés, some of them being those that yielded the glazed ware. I shall revert to the subject of this Mussulman pottery below.

APPENDIX TO THE ARCHAEOLOGICAL MAP OF THE TURKOMAN STEPPE

(Fig. 3 and 4).

No. and name of Tepé	Height	Diameter	Shape	Sherds	Observations
1. Dügünči tepé	about 5 m.	about 50 m.	Round	14 (foot of 3-legged vessel)	About 200 m. west of the Asterabad road, hollow in the middle
2. Tikilidje	• 3 m.	80 × 50 m.	Oblong	About 20	
3. Pamuktepé I	• 4,5 m.	about 120 m.	Round	Few	
4. Pamuktepé II	• 6 m.	Each mound 80 × 80 × 160 m.	3 round mounds built together	1 painted	
5. Šoghaltepé	• 6 m.	200 m.	Round	None	Near Köpri Hadji Kara north of the river; with Imam Zade on top. The name = Ali the Prophet.
6. Hadji-Qoldjatepé	• 2,5 m.	About 50 m. long	Double mound (oblong) each 50 m. in length	None	
7. Al Pihamber	• 6—7m.	200 × 120	Oblong	None	
8. Karačinin Qaladžighi (Qaladjik)	3 m.	40 × 40 m.	4-sided rampart	1 painted	
9. Pahlavi Deh (Aq Qale)	Width of rampart about 8 m., height about 6	600 × 600 or more	Ditto		Tepé with square rampart. Square rampart with ruins inside.
10. Guštepé (= 122)	8—9 m.	About 100 m. broad, 800—1000 m. long	Long	Few	A row of narrow eminences in a line.
11. Öidekeke tepé	6 m.	Length about 600 m.	Ditto	None	
12. Küçük tepé	2 m.	15 m.	Round	Ditto	
13. Qayantar	8 m.	60 × 100 m.	Rectangular	Ditto	
14. Aq tepé I	About 11 m.	1500 m. in length	Oblong and irregular	20 (mostly mussulman)	About 135 (partly mussulman)
15. Aq tepé II	Ditto	80 × 80 m.	Square		
16. Josqaludje	About 5 m.	100 × 150 m.	Oblong	None	
17. Toghaladjik I	• 3,5 m.		Round	More than 20	
18. Amber-o-lun	Ditto	150 × 200 m.	Oblong		None
19. Kargilu Ada	About 5 m.	About 80 m.	Round		
20. Akbin tepé	9 m.				
21. Tepé Hašimabad	About 2,5 m.	60 m.	Round	Few	
22. Tepé Azad Male	• 8 m.	120 × 120 × 80 m.	3 eminences	7 (some mussulman)	House on top Flat surface.
23. Laledebin	9 m.	80 m.	Round	Ditto	
24. Tahpušt	7,5 m.	70 m.	Round	None	
25. Isaghi tepé	About 17 m.	About 200 m., top part 50	Ditto with terraces	14 sherds	
26. Ispi dari	• 7 m.	60 m.	Round	6	
27. Čeleki	• 25 m.	?	Oblong with terraces	15 sherds	

No. and name of Tépé	Height	Diameter	Shape	Sherds	Observations
28. Tépé Mahsudabad	About 6 m.	100 m.	Oblong	5	
29. Walli tépé	15 m.	70 × 60 m.	Tépé with 1 terrace	None	
30. Endjilu tépé	About 11 m.	150 m.	Oblong, broad, 1 terrace	Few gray, red or brown	
31. Qaladjik (Gültepé)	6 m.	130 m.	Many-cornered	Few	
32. Qotur Ada	6 m.	Middle part 100 m.	Irregular height	None	
33. Tingekli	10 m.	180 m.	Round	Mussulman	
34. Baš tépé	7 m.	120 m.	Irreg. terrace	Many (mussulman)	
35. Šoghaltepé	6 m.	120 m.	Round	1 black-on-red-painted, many grey or red	
36. Šoghalabad	About 20 m.	150 m.	4-cornered trapezoid	16	
37. Payé Andjelu	12 m.	100 × 100 m.	4-cornered	10	
38. Tépé Mirgurban (?)	7 m.	70 × 70 m.	Rounded oblong	7	
39. Tépé Surkhakula	11 m.	90 m.	Round	14, 3 black-on-red painted	
40. Qaladjik	1 m.	?	4-cornered	None	
41. Nadirtepé	6 m.	120 × 160 m.	oblong, pear-shaped	6 (also painted)	
42. Saltandun (Sultan Duvin) tépé	15 m.	160 m.	4-cornered (several tepés in vicinity)	Some	400 m. to N. W. a small 6 m. high tépé.
43. Qaladjik (N. B. 6 graves to the south)	6 m.	100 m.	obl. 4-corn. + projection	Some	180 m. from fixed point to W. S. W. a burial mound.
44. Qodjok ölen	7 m.		Pear-shaped surrounded by marsh	22	
45. Gamiš tépé I	7 m.	80 × 100 m.	Surrounded by marsh		
46. Yolašan	4.5 m.	150 m.		None	
47. Qaladjik	3 m.	70 × 70 m.	4-cornered surrounded by marsh	Some (mussulman)	
48. Without name	3.5 m.	110 m.	Oblong	1 grey	Another in the vicinity, 100 m. long.
49. Göbektepé	14 m.	200 × 250 m.	Irregular, long	Some	Near G. T. 3 smaller mounds G I—G III.
50. Gouda tépé	4 m.	Prob. about 120 m.	Round with projection	None	
51. Yoska	2 m.	60 m.	Round	Some	Burial place.
52. Yegen Murat	5 m.	About 80 × 50 m.	Rounded 4-cornered	6 (2 painted)	
53. Alakargi	7 m.	About 400 m.	Long, with several eminences	6	
54. pengir or Senger tépé	3 m.	50 × 50 m.	4-cornered (square)		
55. M 3	6 m.		3 tepés near one another	5	

No. and name of Tepé	Height	Diameter	Shape	Sherds	Observations
56. Gamiš tepé II	7 m.	140 m.	Rounded 4-cornered	Some (2 painted)	
57. Tepé Aghač (earlier no. 250)	6 m.		Irreg. formation	None	N. B. forgotten on S-s plan a mound to N. W. (No. 2).
58. Čor tepé	8 m.		Oval	None	
59. Toghaladjik II	7 m.	About 100 × 100	Rounded 4-cornered	Few	
60. Mollah tepé	9 m.	120 m.	Oblong, rounded	Some	
61. Djafar tepé	5 m.	100 × 100 m.	Square	None	To N. E. a mound 3.5 m. high, 20 m. in diam. 200 m. away.
62. þengerli or Sengerli tepé	About 12 m.	200 m.	With extension	8 (1 painted) + 9 mussulman	
63. Košir tepé	9 m.	?	Long	Ditto (also mussulman)	With ramparts as continuation.
64. Herdedjé	6 m.	50 m.	Irreg. long with a round sect.	None	
65. Yeketut	8 m.	80 × 90 m.	Rectangle	9 (2 painted)	
66. Karakhan tepé	About 12 m.	180 m.	Oblong (oval)	A dozen (5 painted, foot of vessel)	+ 3 mounds, K 1, 2, 3; 80, 90, 110, 1 = 244.
67. Tašköprü	12 m.	300 m.	2 eminences	20	
68. Ambarlidja	3.5 m.	300 m.	Oblong	None	7 Kibitkas to N. at Karasu tepé to N. thereof.
69. Derman tepé I	4 m.	90 m.	Oblong, 3-cornered	None	To the south the Klim tepé on the other side.
70. Derman tepé II	4 m.	90 m.	Rounded 3-cornered	Some	North of Karasu.
71. Sâfekhuli	5.5	250 m.	2 irreg. hills to S.	None	
72. Without name	5 m.		Long, 3 eminences (1. to S. 90 m.)	Some (also late red polished)	
73. " "	4.5 m.	200 m.	Double mound	Some (red beak-shaped spout)	
73 b. " "	2 m.	70 m.	Round	6	3 eminences
74. " "	5 m.	240 m.	Oblong	Some	
75. " "	4 m.	120 m.	Round	None	
76. " "	5.5 m.	80 m.	Rounded	Some (grey and red)	
77. Hayat tepé	10 m.	100 m.	Oblong	21	
78. Qodjuk Kalasi	3 m.	80 m.		None	1 km. south of the river.
79. Aqdje I	8 m.	?		14	
80. Čakhir tepé (Ölen tepé)	5 m.	?		10 (1 painted)	Half cut off by the river.
81. þari(h) Mullah tepé	8 m.	90 m. long	Oblong, 3-cornered	11	
82. Pokhlu tepé I	9 m.	60 m.	Round	Some	Betw. I & II a 4-cornered burial-ground with 2 oblong find-places

No. and name of Tépé	Height	Diameter	Shape	Sherds	Observations
83. Pokhlu tepé II	5 m.	less	Ditto	7 (some mussulman)	
84. Kōrkli tepé	1,5 m.	30 m.	Ditto	None	
85. Qōl tepé	8 m.	90 m.	Ditto	11	
86. Yarim tepé	15 m.	100 m.	Originally round; cur off by the river	Many, as well as whole vessels (also painted ware)	To. N. E. a smaller tepé, 40 m. diam. 3 m. high, no sherds but bricks.
87. Tokhtamiš tepé	9 m.	130 m.	Round	17	
88. Han Holumin tepé	5,5 m.	90 m.	Ditto	Some (1 painted)	
89. Without name	4 m.	90 m.	Oblong round	Ditto + bricks	
90. Qaladjik	4 m.	50 m.	4-cornered	None	
91. Karaul tepé	7—8 m.	90 m.	Rounded 4-cornered	15 (partly mussulman)	
92. Khasotepé	7 m.	90 m.	Obl. round	None	
93. Abedin Yatan	8 m.	90 m.	Round	5 (1 mussulman and 1 painted)	Flat top
94. Kaplan tepé	12 m.	150 m.	Obl. with round middle	Ditto	One smaller tepé, 3,5 m. high, 90 m. distant.
95. Kaška tepé	13 m.	150 m.		Some	
96. Mezengirilen	4 m.	80 m.	4-cornered	None	
97. Baghištepe	12 m.	220 m.		15 (some painted)	One larger & one smaller.
98. Without name	1,5 m.	40 & 35 m.	2 mounds	None	
99. Tamerli	7 m.	150 m.	Oblong	Some	
100. Halegilič I	3 m.	70 m.	Round	Few	+ 2 smaller 270 & 250 m. from no. 1.
101. Pokhlutepé	6 m.	100 m.	4-cornered rounded	13	
102. Karl Hodja	7 m.	100 m.	Obl. rounded	Some	
103. Toghaladjik III	13 m.	100 m.	Round	Ditto (also mussulman)	
104. Without name (middle 10)	5 m.	120 m.	One round & one 4-cornered	11	Another mound nearby at the pond.
105. Without name (middle 5)	7 m.	120 m.		Mussulman	+ 2 smaller mounds
106. Without name (middle 17)	3 m.	40 m.	Round	None	
107. Without name (middle 18)	4 m.	140 m. long	Oblong	Ditto	
108. ħalian tepé (Salian tepé)	7—8 m.	90 m.	Ditto	Ditto but bricks	Cut off at river-bank
109. ħengerdjik	3,5 m.	?	Ditto	None	
110. Qala	4 m.	100 × 100 × 100	Obl. 4-cornered	Ditto (bricks)	
111. Without name (middle 24)	5 m.	60 m. (middle part)	4-cornered 2 lower wings rounded	None	
112. Without name	4 m.	130 m.	4-cornered with 1 open side	Ditto	1 smaller mound to the west in front of entrance.
Without name (middle 27)	4 m.	80 m.	Round	Ditto (bricks)	Between Dōurek tepé, Kara tepé and Aqħebir tepé

No. and name of Tepé	Height	Diameter	Shape	Sherds	Observations
113. Daradjik	10 m.	180 m.	Round with large mound in middle	Bricks	Döureh Colony I., round mound, 4 m. high, 70 m. in diam.
114. Döureh tepé I	12 m.	100 m.	4-cornered with round extension	Red sherds	
115. Without name (north 3)	8 m.	80 m.	2 eminences with lower rise on one side	None	
116. Without name (north 1)	10 m.	1500 m.	Long eminence with little hill at north end	None	
117. Fortress	7 m.	400 m. (side)	4-cornered rampart & eminence in 1 corner (ruins)	Ditto	
118. Qarinyarik tepé (= North 2)	12 m.	400 m.			(An eminence 15—30 m., another eminence 12 m).
119. Yilghan tepé I	3.5 m.	160 m.	Round	None	
120. Šah tepé Küčik	3 m.	150 m.	Ditto	More than 50 (foot of 3-legged red polished bowl, mussulman sherds).	
121. Toghalak tepé	7 m.	80 m.	Ditto	Few, red	
122. Guš tepé	8—9 m.	800 × 1000 × 100 m.	Long double eminence	16	
123. Erqawa tepé	8 m.	100 × 50 m.	Obl. rounded	Many mussulman, 6 prehist.	
124. Tašludje tepé	1.8 m.		Round, 4-cornered	Bricks + sherds	
125. Qökči-tepé	4 m.		Round	About 20 (2 painted)	
126. Aq-baš tepé	8 m.	90 m.	Round-oval	16	
127. Þengir tepé	5 m.	80 m.	Round	None	
128. Tikanli tepé	3 m.	70 m.	Ditto	About 30.	
129. Čahar tepé (the humped tepé)	8 m.	70 m.	Ditto	About 20 some mussulman)	
130. Kanbär tepé	2.5 m.	90 m.	Ditto	About 20 (mussulman)	
131. Asurkuli tepé	About 9 m.	90 m.	Ditto	Few	
132. Amar tepé	4 m.	90 m.	Ditto	None	
133. Čayir tepé	1.5 m.	40 m.	Ditto	Ditto	üč tepé II 120 * , III small
134. Āneš tepé	2.5 m.	100 m.	Ditto	Some	
135. Ahen tepé	2.5 m.	60 m.	Ditto	8	
136. Wallu tepé	5 m.	100 m.	Ditto	Some (one mussulman)	
137. Tepé Mäšumabad	3.5 m.	60 m.	Ditto	10 (2 mussulman)	
138. Üč tepé I	4 m.	80 m.	Round	10 (2 mussulman)	
139. Pamuk-tepé	3.5 m.	70 m.	Ditto	Some mussulman and others	
140. Agha Baba	2.5 m.	70 m.	Ditto	Few	

No. and name of Tépé	Height	Diameter	Shape	Sherds	Observations
141. Kedi tepé	3,5 m.	80 m.	Round oblong	8 (3 with knobs, also mussulman)	
142. Čöp baš tepé	4 m.	90 m.	Round	None	
143. Akhčali tepé	3,5 m.	70 m.	Ditto	Some	
144. Djangi tepé	6 m.	70 m.	Ditto	14	
145. Gökči tepé	5 m.	120 m.	Ditto	Few	
146a. Dört Čariyar	4 m.	About 200 m.		Many	
146b. Hadji Agha	4 m.	80 m.	Round	Black-on-red.	
147. Zal tepé	About 2, 5 m.	About 60 m.	Ditto		
148. Kafšigiri tepé					
149. Kuliabad	About 5 m.			Some	
150. Bazardöven					
151. Pirvoš-tepé					Near mountains.
152. Šoghaltepé					
153. Kara aghač					
154. Üč tepé II					
155. Üč tepé III					
156. Gökči tepé II				16	
157. Agh Meše					
158. Qala					
159. Boz O(gh)lan					
160. Qasim Khan tepé					
161. Nār tepé					
162. Siyamers tepé					
163. Kafertepé					
164. Seyit mirza					
165. (102) Kari Hodja					
166. Nargiz tepé					
167. Sulu tepé = (pulu tepé)					
168. Tatar tepé					
169. Zalaın tepé					
170. Halegilič tepé					
171. Gökdje tepé					
172. Mehmet Well					
173. Impaqir tepé					
Without name	3 m.	80 m.		Few	
174. Šehitli tepé					
175. Serdar tepé = perdar tepé					
176. Batghaldja tepé					
177. Qoša tepeler					
178. Karga tepé					
179. pültepé (= Sul- tepé)					
180. Mōmindjik					
181. Tokmak					
182. Altin tepé					
183. Nitip-hodja tepé					
184. Guyakdje					
185. Qizler tepé					
186. Qarinyarik					
187. pikir tepé					
188. Güllidje					

No. and name of Tépé	Height	Diameter	Shape	Sherds	Observations
189. Qaš qaltaq	8 m.	165 × 135 m.	Obl. rounded	Excavations	
190. Qalč hodja					
191. Qaladjik					
S. Šah (Shah) tepé buzurg					
Th. ħakerlan tepé	About 6 m.	200 × 200 m.	Round, 4-cornered	Some (also mussulman, leg of black 3-legged bowl)	
Y. Yilghan tepé					
N. Nergiz tepé					
KM. Kala Mahmut	8 m.	L. 150 m.	Plan and section fig. 5	12	
K. Kala Khandan tepé				Mussulman	
Kw. Kara tepé				21	
Hk. Hadji Kara				Trapezoid grey-brown	
Gü. Gültepé				Some, red or grey-brown	
T. Turabi tepé				About 20	
Gu. Guštepé				Mussulman and others	
Ge. Gerey tepé				About 10 (red polished)	
H. Hodjamberdi Khan					
QH. Qoš Hodja					
AS. Ašir Šikh	14 m.				
TT. Tureng tepé				Many (American excavations)	
Kö. Kara tepé					
Dö. Döureh tepé				27 (some mussulman)	
Aq. Aqĥibir				22 (one leg of tripod; some mussulman)	
Bö. Böurek tepé					
M. Merdjendje				Many mussulman	
SM. Šikh Musa					
DB. Dört Böurek				24 mussulman	
Q. Qöktepé					
Pl. Pihamber					
KD. Kefer Doun				About 20 (2 painted)	
BT. Bent tepé				About 20	
Ia. Yartkhaye				Some	
Ha. Han Akhmet				Some	
BS. Bibi Šurban					
YT. Yaĥ tepé				15 (1 mussulman)	
TY. Čonak Yatan				25 (red ware)	
TN. Tepe Nour				19 (mussulman)	
Qa. Qaladjik (Batrišan)					
AN. Āk Nour				22, mostly mussulman	
E. Egirtepé				22	

No. and name of Tépé	Height	Diameter	Shape	Sherds	Observations
Kou. Kou tepé				25 (some mussulman, glass)	
AI. Agh Imam					
AT. Āk Tamin tepé					
QI. Qarenkiy Imam					
G. Gumbet-i-Qabuz					
Ka. Karaul tepé	About 10 m.	180 × 150 m.	Round mound surrounded by rampart	Some	

The *mussulman sherds* here mentioned, are generally glazed. The *painted sherds* are prehistoric, mostly black-on-red. More than a dozen tepés show unglazed mussulman pottery of brick-red ware, but there is also red polished and coarse ware from the same epoch. Of the prehistoric pottery the majority is black or grey, but we have also red polished ware, coarse ware, mottled ware and finally a polished thin ware, partly red, partly grey.

AN ACCOUNT OF THE EXCAVATIONS OF SHAH TEPÉ

STRATIGRAPHY

That we decided to investigate Shah Tepé rather than any other was because it promised ancient finds similar to those yielded by Tureng Tepé. Strewn about the tepé lay fragments of black and red-painted and also grey or black pottery, as well as glazed Mussulman sherds. Nor was the mound difficult of access. It lies just to the north of the Turkoman village Qarinjik, situated near the little river Karasu 13 miles as the crow flies N. N. W. of Asterabad-Gorgan, not far to the west of the road between Asterabad and Pahlavi Deh. Shah Tepé is an oval mound with a longitudinal axis pointing north-south. The east side is steeper and straighter, while the west side is strongly rounded and more gently sloping. The length is about 165 metres and breadth 135 metres. The top of the mound forms a rather even plateau about 7—7.5 m. in height. The highest point is 8.11 m. (Pl. I, Figs. 8, 9, 10).

The plan of excavation was as follows: square shafts were sunk from the surface of the tepé to the bottom and under the same, sometimes to a depth of nearly one metre below the base. The sides of the shafts measured, as a rule, 10 m.; the majority of the shafts thus covered an area of 100 square metres. Only in the case of shaft E were the dimensions 10×15 m. We did not have time to make a complete examination of shaft H. (Figs. 11, 12, 13).

Altogether 8 shafts were sunk in different parts of the mound, most of them on the plateau above the 7-metre curve, but some also on the steepest slope to the east. The shafts were designated A-H. Approximately 6,000 cubic metres of earth was gone through with pick, spade and knife. The soil was generally thrown up in terraces, and fortunately did not need to be transported to the level ground, which for the most part consisted of tilled fields. (Fig. 14.)

The investigation showed at first sight three strata. These could be distinguished without much difficulty, not in relation to the layers but with reference to the nature of the finds. The uppermost layer, corresponding to stratum I, was

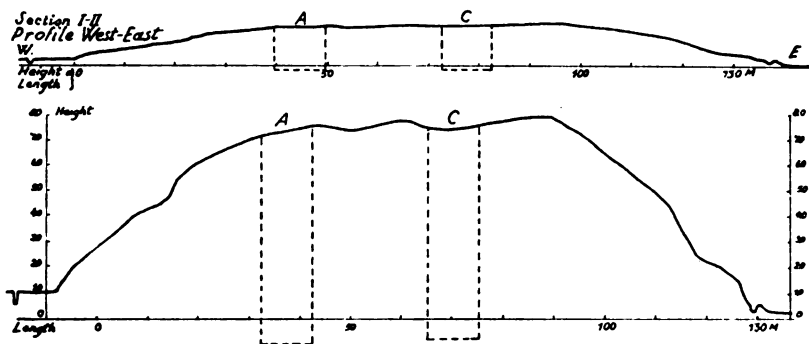


Fig. 11

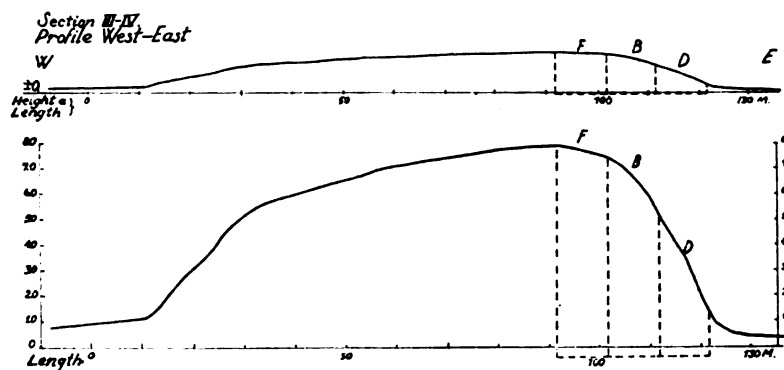


Fig. 12

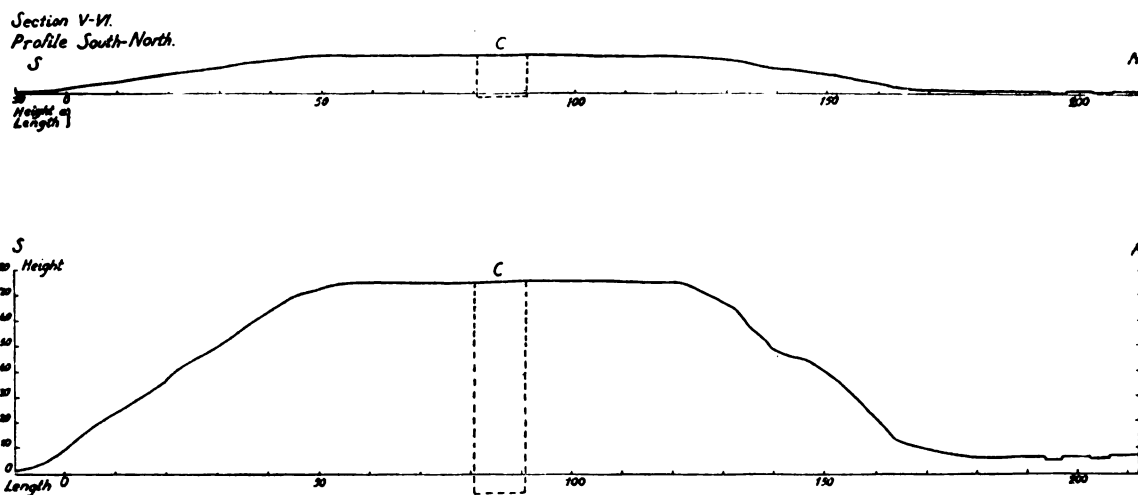


Fig. 13

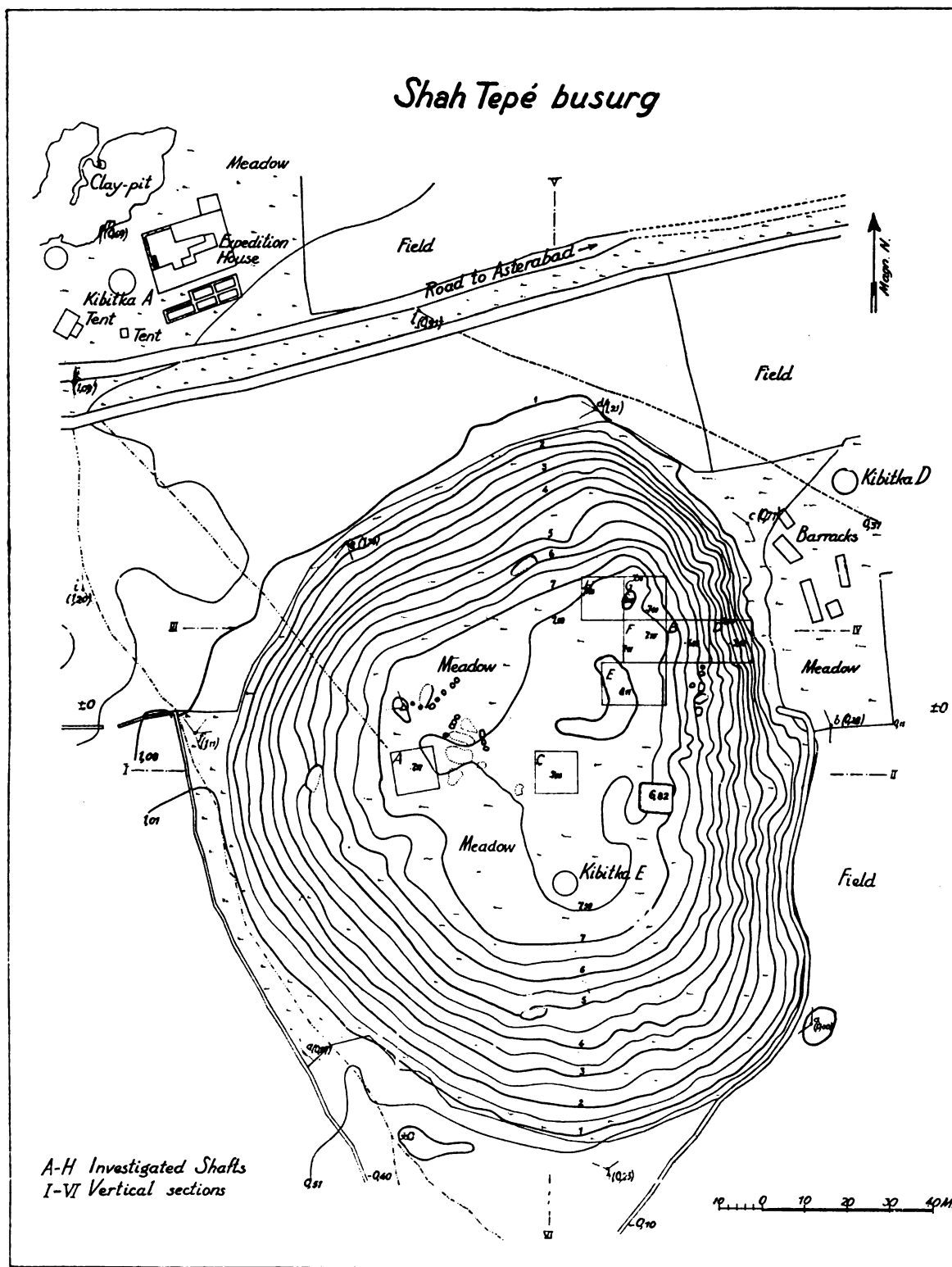


Fig. 14

SHAH TEPE. Schematic Cross-section through the levels.

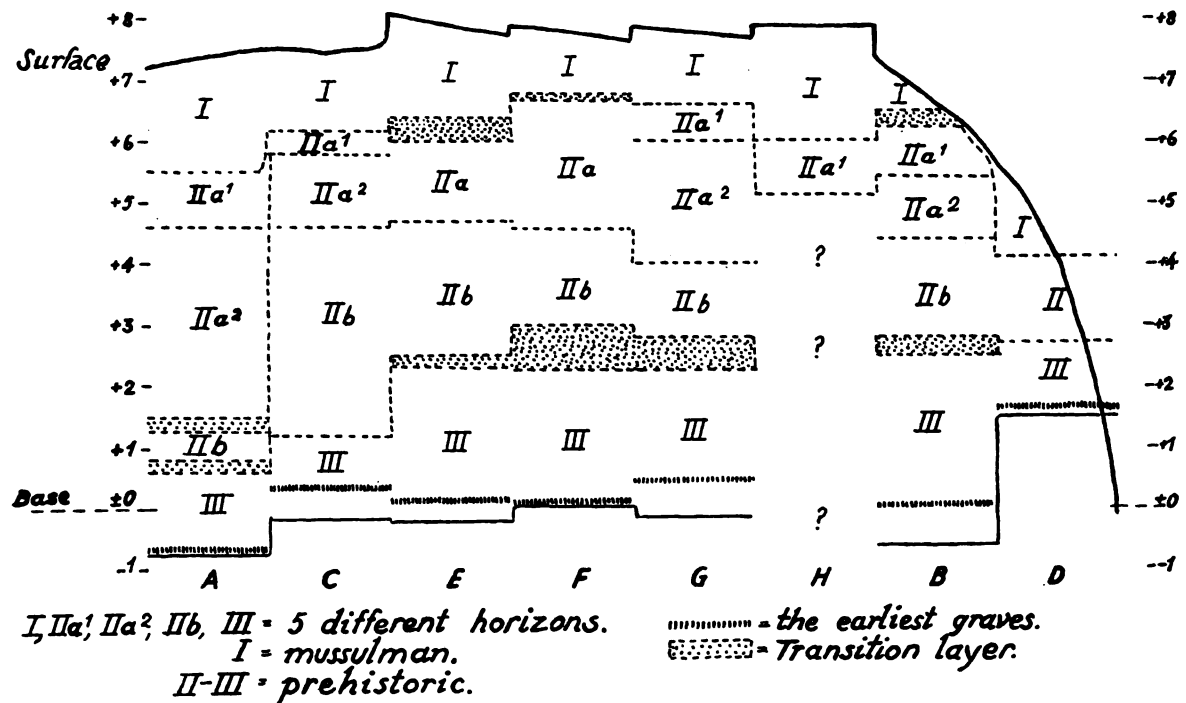


Fig. 15

Mohammedan, and contained Mussulman graves together with all sorts of refuse of glass, pottery etc. Immediately below this layer was stratum II, containing prehistoric graves with black or grey pottery and alabaster vessels etc. Below this again lay the oldest stratum III, also with numerous graves, containing, besides black or gray, also painted pottery with black ornamentation on red ground (Fig. 15).

The mound consisted chiefly of loess-clay with a covering of rather earthy sand, with which, here and there, the clayey interior of the mound was also mixed. The mound had certainly arisen by the gradual accumulation, through centuries, of the remains of dwellings. Mud houses had been continually built and pulled down — or had fallen down — on the same site; refuse from meals and broken vessels had been thrown out; the dead had been buried under the floors or just outside the houses. The tepé thus concealed at the same time a prehistoric town or village and a great necropolis.

In the following, on the basis of the log-book and the plans, some account will be given of the course of the excavation and of the position of the finds on the different shafts and strata. In this connection the positions will be given in the reverse order, i. e. from the base upwards.

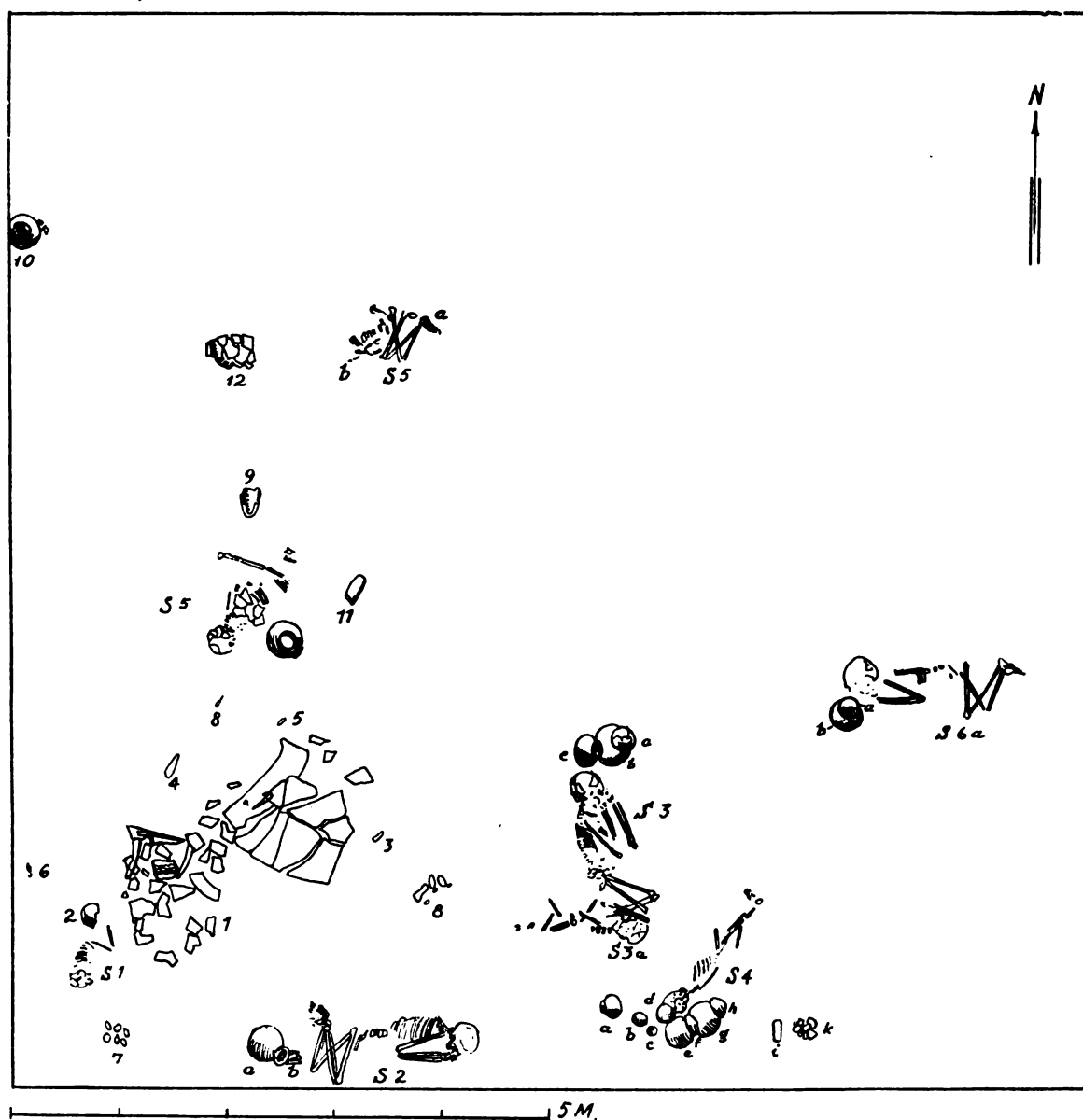


Fig. 16

SHAFT A

Stratum III (Fig. 16)

Digging began on April 6th 1933, and was completed on May 14th. *Stratum III*, that is to say, the oldest layer containing remains, had left traces down to —0.75 m. below the O-point (situated at the foot of the hill on the road, 30 m. to the east).

The upper limit for finds of painted pottery was approximately $+0.75$ m., but about 80 smaller fragments of painted clay vessels were found somewhat above this level in A II. A couple of fairly large heaps of fragments of storage vessels, with black painting on red or reddish yellow, lay near the south-west corner of shaft A at a height of $+0.60$ m (A III, 1. Pl. I, Fig. 17). Altogether about 70 larger fragments of painted pottery were catalogued in A III. Among these painted potsherds, however, were also others, belonging to black polished clay vessels. Only two painted clay vessels were found in skeleton graves, to wit, in S^4 at a depth of -0.60 m. and in S^3 at the same level.

The skeleton graves in A III lay at different levels, and belonged clearly to two different periods. The uppermost, in the light of its ceramic, showed a *transition* to stratum II. The «oldest» skeleton graves (S^3 , S^4 , S^5 , S^5 a, S^6 a as well as remains of *two small child skeletons*) were found at a depth of -0.50 to -0.65 m., and contained a homogeneous collection of *bellied jars* and for the most part *hemispherical bowls*. The graves S^1 , S^2 , S^3 a, on the other hand, were on about the same level as the great «clay vessel depot» (A III, 1) with painted fragments, thus at about $+0.60$ m. On the lower level -0.60 to -0.75 m. were found also the earliest egg-shaped or double conical *sling-stones* of burnt clay (no. 372), a *mould* of sandmixed clay (no. 591) and an oblong *millstone*, while a stone *pestle*, *flint flakes* and other double conical *sling-stones* were found higher up at $+0$ to $+0.25$ m.

Metal objects, in the form of *copper rivets* (tacks), were discovered even in one of the earliest graves, namely S^4 ; and a *spearhead of copper* lay at a height of $+0.60$ m., as did also a pointed *bone implement*. On the level $+0.60$ m. were found a *millstone* (no. 108) and a biconical *stone bead* (no. 106), at $+0.70$ m. another pair of *millstones* (nos. 100 and 101).

Stratum II (Fig. 18 a, b)

In this were observed *ruins* in the form of house-walls of packed mud, harder and of lighter colour than the surrounding earth. An almost square room with rounded corners opened towards the north wall of the shaft — the fourth wall was farther in and was not dug out (Pl. II, Fig. 19 and Fig. 20). The surface of the three excavated walls, measured from the base, was situated at $+2.95$, $+2.90$ and $+2.75$ m. respectively. The external width of the room was 4.75 m., the inner width (between the walls) was 3.50 m. The height of the walls varied between 1.15 and 1.35 m.; the maximum width was 0.9 m. except in the south-west corner, where the wall was extended to 1.25 m. in width and enclosed a well. The latter was about 1.20 m. deep and measured approximately 0.9 m. in diameter. Just inside the wall, near the well, we found an arrangement of stones, inclined towards the west and north-west. This lay at a height of $+1.40$ — $+1.65$

Shah Tepè A II b

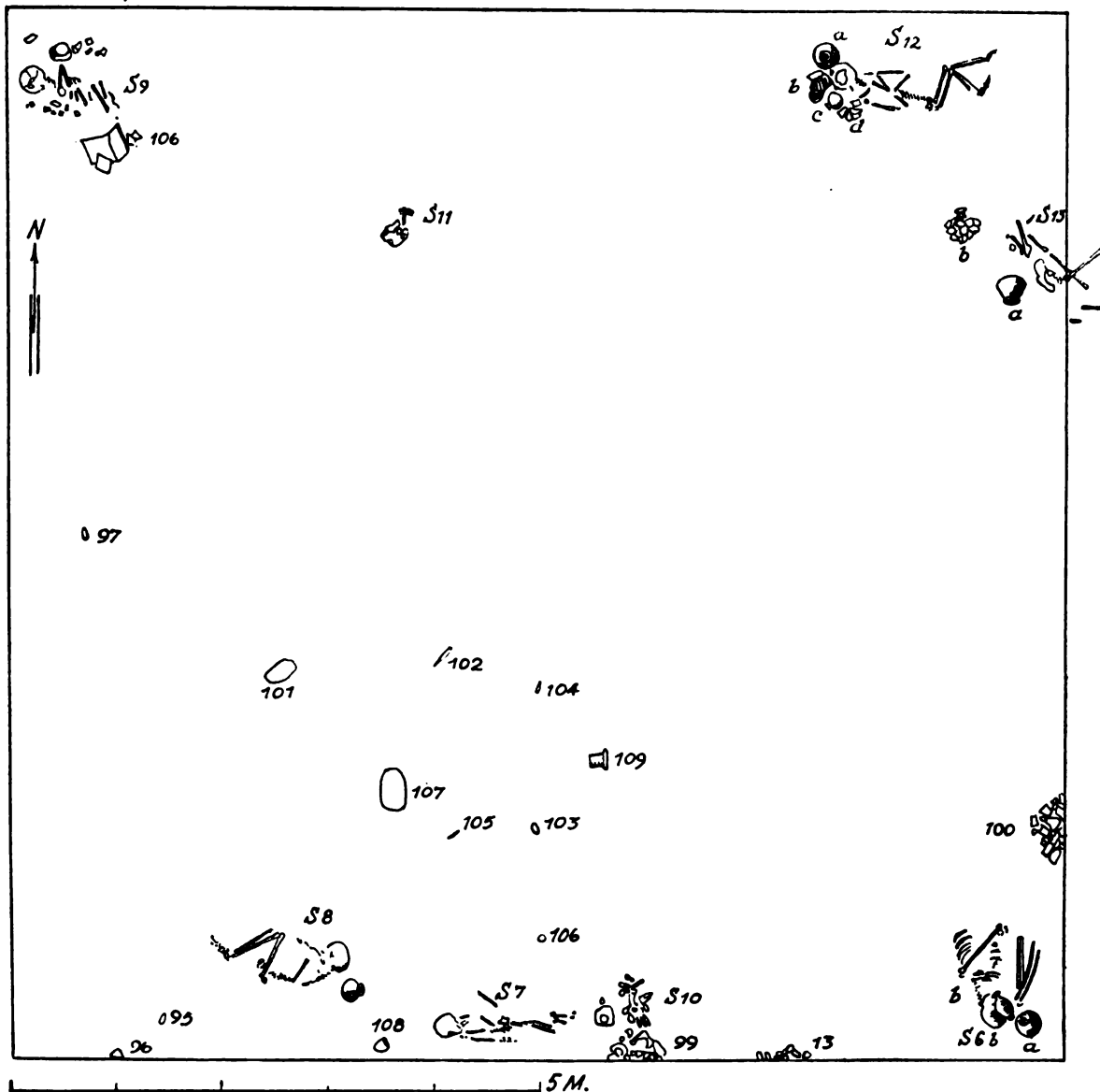
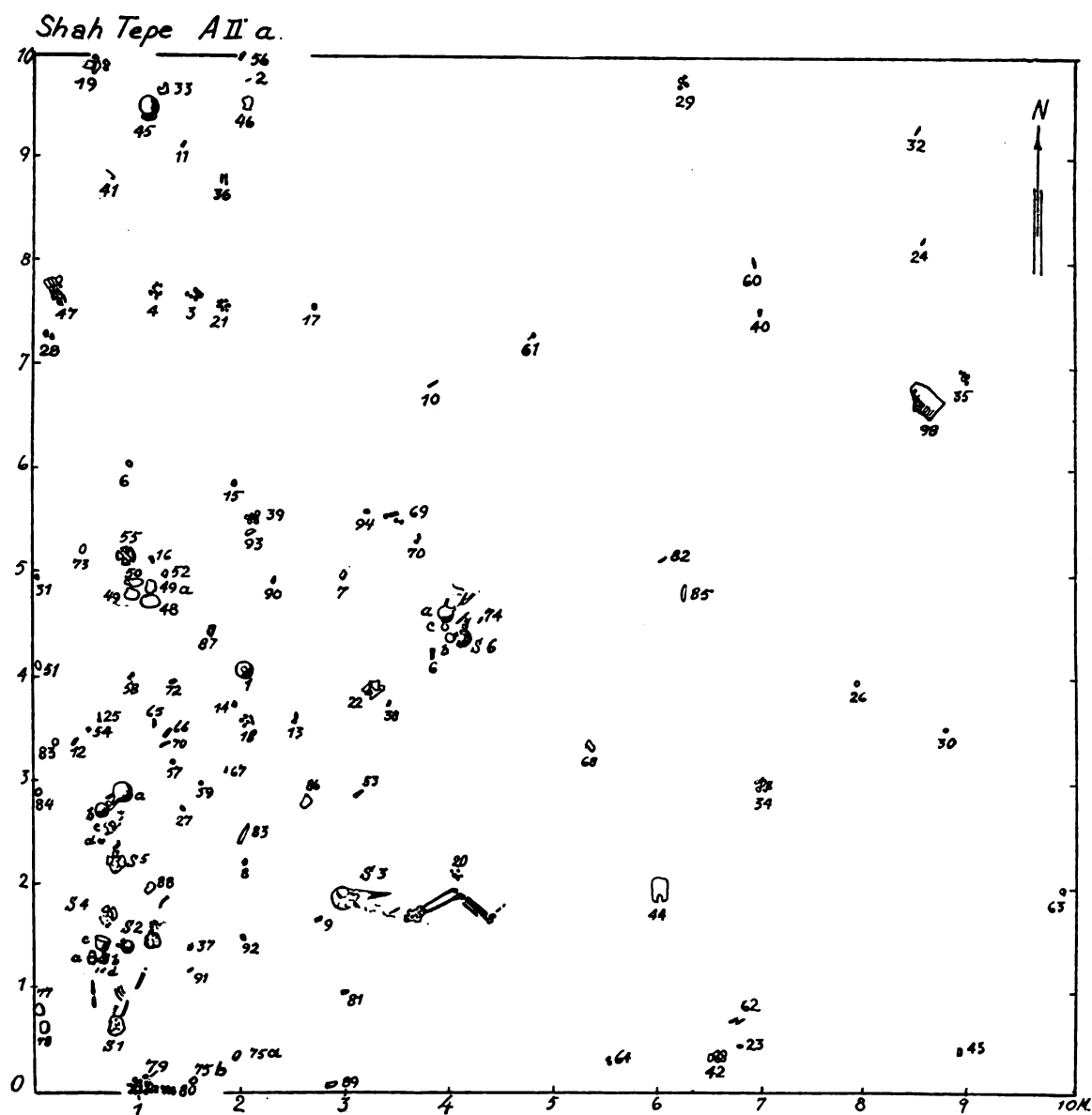


Fig. 18 a

m., thus about at the same level as the bottom of the well. It was only about 0.60 m. in diameter. No painted pottery was found inside this room, though bits were discovered here and there to the south of the room.

At a higher level, with the upper surface +4.00 to +4.50 m., we found another collection of foundation-walls of a dwelling. (Fig. 20). These protruded in the western part of shaft A II, to the south of the room discussed above. In one of the walls was found a deep but narrow hole (approx. 0.25 cms.), which went down to +0.70 m. The walls were fragmentary, and it was not possible to get a complete



picture of their original state, especially as the region to the west was not examined. A lot of black earthenware was discovered both inside and outside this room.

In the north wall of shaft A were observed 4 thin burnt layers one on top of the other, counting from the undermost upwards *a*, *b*, *c* and *d*. Layer *a* was situated about +2.30 m. and was characterised by black coal mixture towards the bottom and red-burnt earth above, taken together, of 0.20 m. in thickness. Layer *b* was situated 1 m. higher up, that is, at about +3.30 m., and was also mixed with coal towards the bottom and of red-burnt clay above. The thickness was 0.1 to 0.2

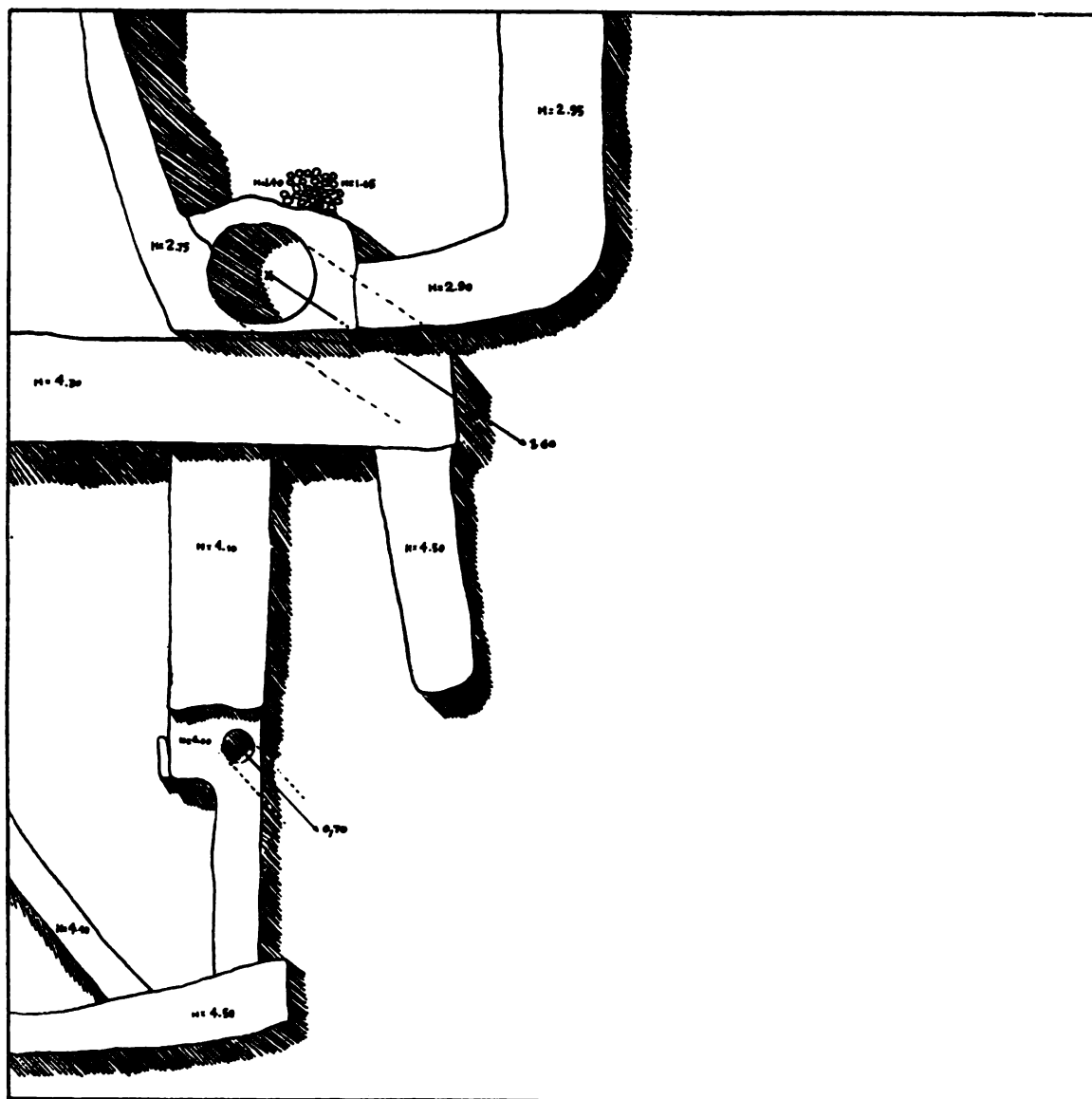


Fig. 20

m. Layer *c*, which was short and thin, lay about +4.30 m., and finally, *d*, a faintly developed burnt layer, was situated at rather more than +5.00 m (Fig. 21).

At the level +0.80 m. to +1.25 m. were found some graves (*A III S⁶ b*; *A II*, *S¹³*, *S¹²*, *S⁸*). These, together with grave *A III S²* from the level +0.60 m., could be seen from their contents of characteristic clay vessels, such as *deep bowls* or *goblets*, *biconical*, *egg-shaped* and *round or oval vessels provided with two handles*, to constitute a closed early group within stratum *A II* (11 b). Of the three graves *A II S⁹*, *S¹⁰* and *S¹¹*, lying approximately at a level of +1.50 m., the first contained a little *clay vessel with spout* (missing), which probably linked this group to

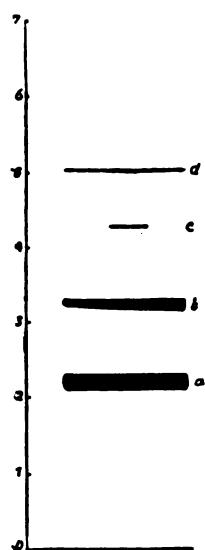


Fig. 21

the one situated in A II at the level +3.10 m. to +4.60 m. (the graves A II S⁸, S⁵, S⁴, S²), all of which contained *vessels with tubular spouts* (II a²). In A II S⁴ was found also a *miniature axe-adze or mattock of copper* and in A II S⁵ a *bottle and beads of alabaster*.

An intervening grave (A II S⁷ at +2.10 m.) unfortunately yielded no find.

Among the loose settlement finds at the level +0.75 m. to 1.50 m. may be noted 3 or 4 *millstones*, 3 *flint-flakes*, a number of white or black *polished stones* and on top a *spearhead* (+1.30 m.) and an *awl* (+1.40 m.) of *copper*.

At the level +1.50 to +3.00 m. were found various fragments of black or blackgrey earthenware, including *handles* to ladles, open *spouts* belonging to different kinds of vessels, and feet from wide *clay-bowls*. Also small bellied *jars* and a *foot* were found, for example at +2.20 m. (A II, 45) and +2.90 m. (A II, 55). A *clay statuette of a woman* (A II, 46) lay at the level +2.10 m. *Copper* implements in the shape of 2 *awls* and 2 fragments of *knives* (A II, 64 and 65, A II, 54 and 58) were also found. Further, we may mention *slingstones* of burnt clay, a *spindle whorl* of the same material, *millstones*, *flint-flakes* and a *bone chisel* (A II, 53 at +2.80 m.), a *bone pin* (A II, 105) and a pointed *bone implement* (A II, 104).

If we now turn to the layer between +3.00 and +5.00 m., corresponding to the uppermost prehistoric grave layer and somewhat more, we find a *clay cup*, *spindle whorls of clay*, *millstones*, *flint flakes*, *bone implements*, a *pin* and an *awl of copper*. A *fish-bone* was found at +2.50 m.

Up to approximately +5.40 m. were found the prehistoric loose finds including a two-horned *flat stone* in appearance like a bootjack (grindingstone?) +5.30 m., *chisels*, *pins* and *awls of copper*, and at approximately +5.50 m. we may set the boundary towards the uppermost layer A I. Although the boundary-line is set at this level, however, some few prehistoric objects, in connection with re-diggings, happened to land still higher up. Such stray objects were of stone, flint, bone and copper.

Stratum I (Fig. 22)

Here, at levels varying between +6.20 and 6.40 m., i. e. at least 1.60 m above the youngest prehistoric graves, we found 6 prone *Mussulman skeletons*, all lying stretched out in the direction NNW—SSE. Broken *Mussulman clay vessels* (necks with handles) lay at the same level as the skeletons, but in another place as deep as +5.10 m., while *glass* was found at +6.05 m. and an

Shah Tepè AI.

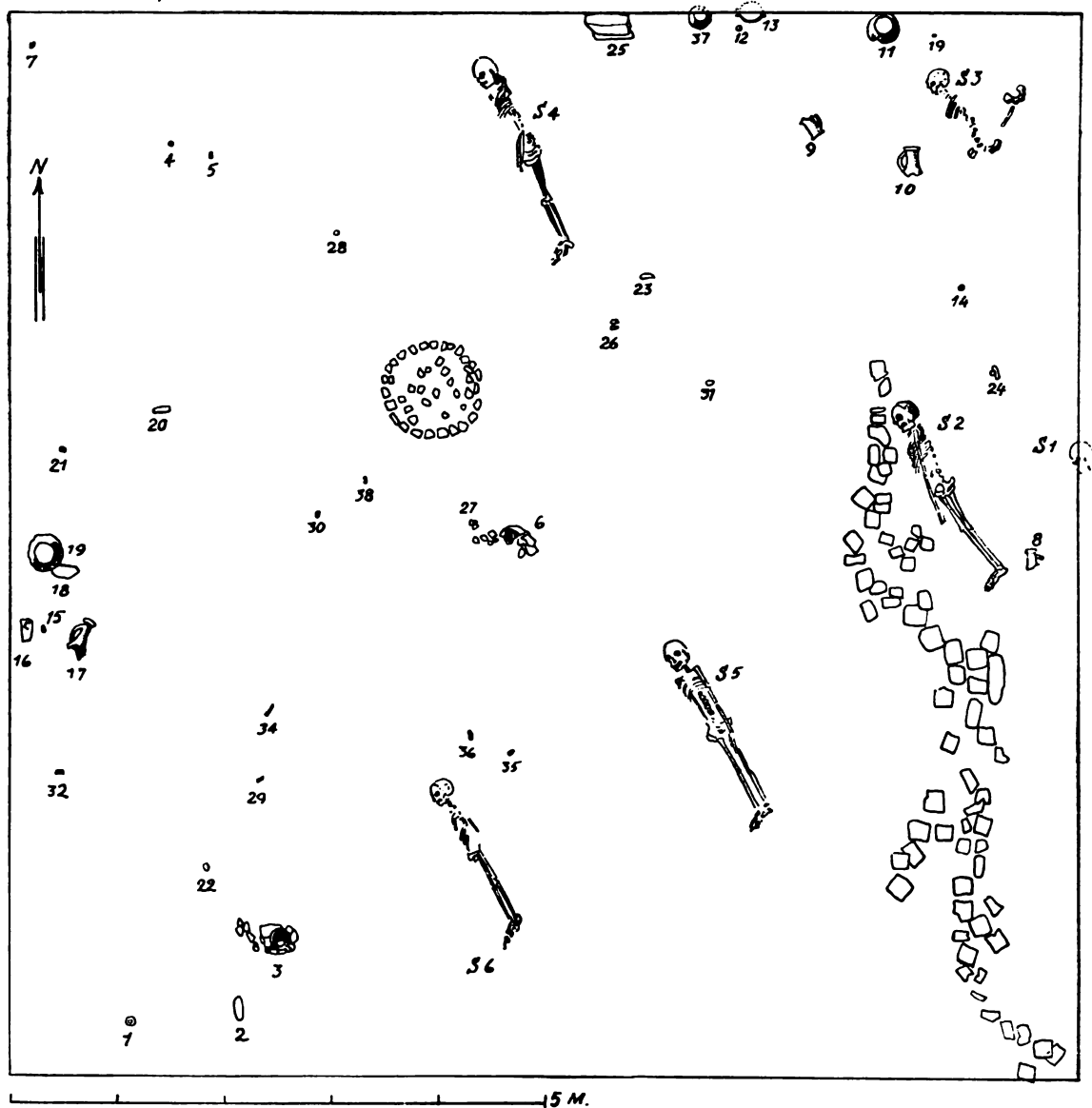


Fig. 22

iron celt at +5.50 m. Conversely, it was possible to find prehistoric flint flakes and bone chisels at a level of +6.50 m; indeed, a ring-formed *club-head* of stone, probably prehistoric, lay at +6.80 m., and besides a few older bits of black earthenware a piece of black and red painted prehistoric earthenware was discovered as high up as +5.30 m.

The highest point in shaft A lay at the level +7.37 m. Twenty to twenty-six cms. lower, thus at a level of +7.11 to +7.17 m., was found an arrangement of square *bricks* about 6 m. in length and 1.00 to 1.20 m. in breadth, obviously a

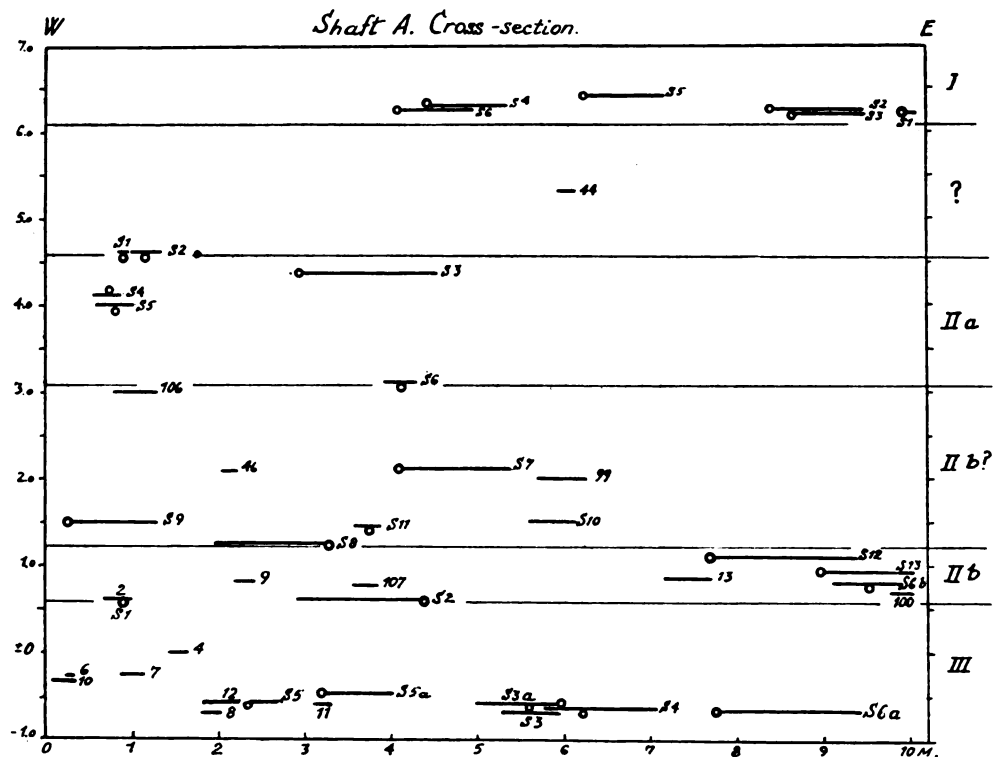


Fig. 24

part of an old flooring(?), on which had been collected fragments of *Islamitic* crockery and glass. (Pl. II, Fig. 23). The bricks measured, for the most part, $24 \times 24 \times 3.7$ cm., the thickness being more variable than the other dimensions.

At the same level as the above mentioned flooring, that is, about 25 cms below the surface, and about a couple of metres to the north-west of the centre of the shaft, was a round *hearth* of smaller bricks and bits of rock. There were scarcely any traces of fire.

Summary. Shaft A shows 4 collections of graves, which characterise 4 periods of settlement (Fig. 24). The oldest comprises graves at a level of -0.60 m. below the surface of the ground (A III), the next in order comprises graves at levels varying between $+0.50$ and $+1.25$ m. (A II b), the next at levels of $+3.10$ — $+4.60$ m. (A II a), and finally, the fourth from Mussulman time at levels of $+6.20$ to $+6.40$ m. (A I). Between the second and third levels is a 2 m. thick layer with a few, only slightly furnished graves, which seem, however, most closely related to the third level. As the graves had probably been dug at least a half, though perhaps more likely a whole metre deep, the contemporary dwellings should be found at a corresponding height above the graves. When, therefore, broken storage jars of painted pottery were met with at a height of $+0.60$ m., the probable conclusion is that the oldest inhabitants lived here and at a

slightly lower level, and dug the graves found at -0.60 m. The wall remains situated at approximately $+2.90$ to $+1.60$ m. are presumably more or less contemporaneous with the graves at $+0.60$ to $+1.10$ m., perhaps also with the somewhat higher ones. The same argument probably also applies to ruins situated higher up and the graves lying under these. As, however, we do not know with certainty how deep the graves were dug, it is not possible to determine their relative ages except in those cases where they are found intact immediately under one another.

SHAFT C

was excavated during the period April 13th—June 1st. It lies roughly in the middle of the tepe and reaches a height of $7.56-7.67$ m.

Stratum III (Fig. 25)

Digging was carried to a depth of nearly -1.00 m., but traces of settlement were not met with below the level -0.15 m. At this point a fire-place(?) emerged, characterised by red-burnt earth. The deepest lying skeleton grave (s 1) emerged at the level of $+0.30$ m. It belonged to a group of 7 graves C III S¹, S², C II, S¹⁴, S¹⁵, S²⁰, S²¹, S²²), of which the highest was situated $+1.00$ m. The contents of these graves comprised for the most part *bellied*, low-necked *jars* and more or less *hemispherical bowls* of black earthenware, characteristic of stratum III. In one of the graves (C II S¹⁵) was found also a *red and black painted clay vessel* at the level $+0.75$. The boundary between strata III and II was calculated to lie about $+1.00$ to $+1.20$ m. above the base. Fragments of red and black painted clay vessels were found to a number of rather more than 300 in C III, (especially at the levels $+0.70$ to $+1.00$ m.), while about 100 were found in C II. Single painted fragments were discovered as high up as $+4.40$ m., *one* even at $+5.45$ m.

The damp clay in the north-east corner of the shaft was yellowish, in the southern part bluish.

Clay vessels in the deepest skeleton grave in C III (S¹) were curiously enough of a different and probably rather younger character than those in the other C III graves. There is, however, no doubt as to their position. A couple of sherds of *painted, red earthenware* also lay in the grave.

Among the loose finds are to be noted, besides painted potsherds, a blade fragment (C III, 4) and a couple of *pieces of copper* (C III, 2 and C II, 117) at the levels of $+0.40$, $+0.10$ and $+1.00$ m. respectively.

A *bone awl* lay at $+0.20$ m. (no. 678 C III, 5) and a *chisel of bone* at $+0.60$.

Shah Tepé' CIII

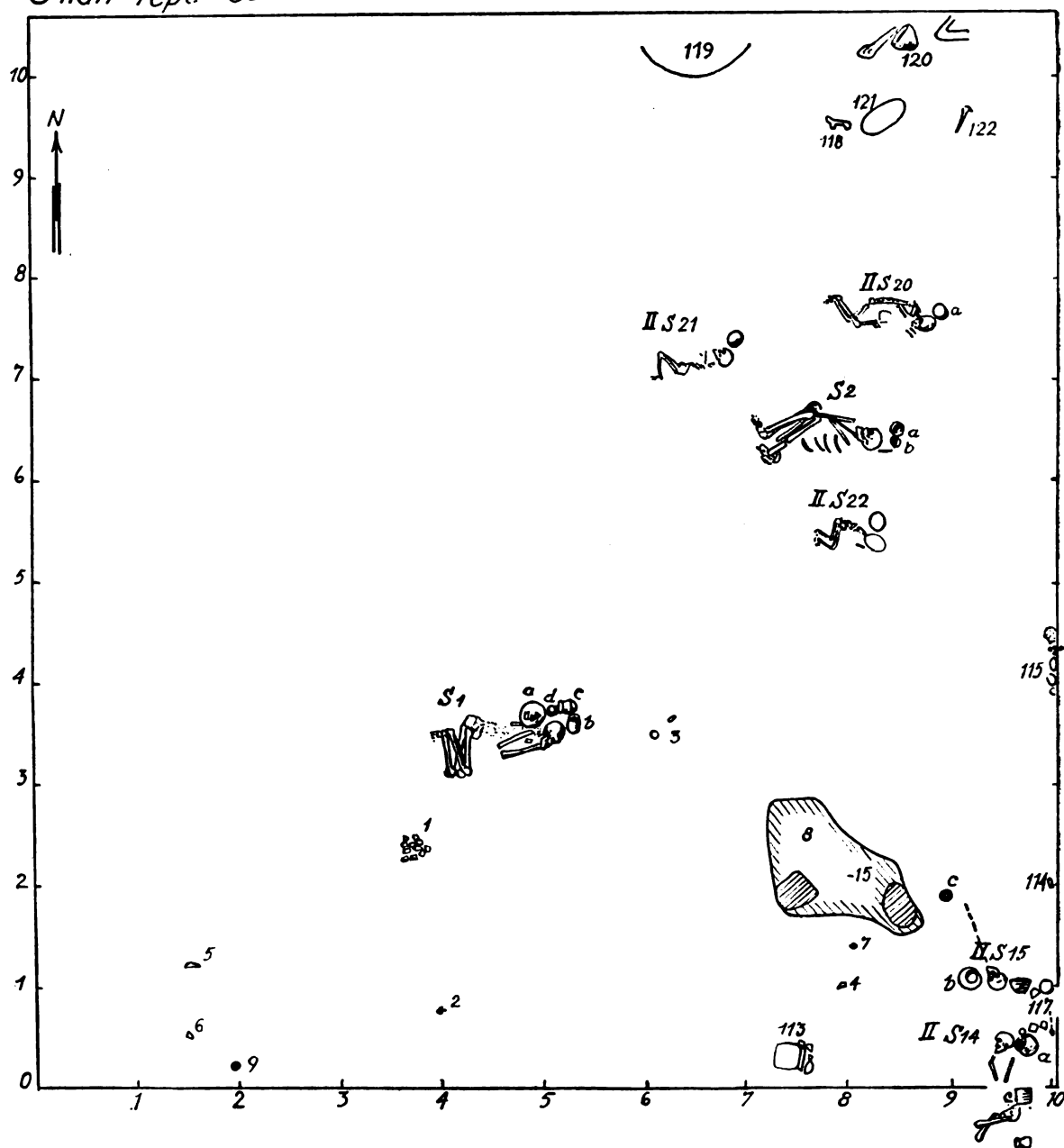


Fig. 25

A *flint flake* was discovered already at $+0.20$ m. Of great interest are a couple of *animal figures of clay*, the one from $+0$ m. and the other from $+1.00$ m., close to grave C II S¹⁴.

Fragments of *black earthenware*, as also intact *black vessels* (C II, 115), occurred here and there, from $+0.10$ m. and upwards to $+1.00$ m., and also a large red-

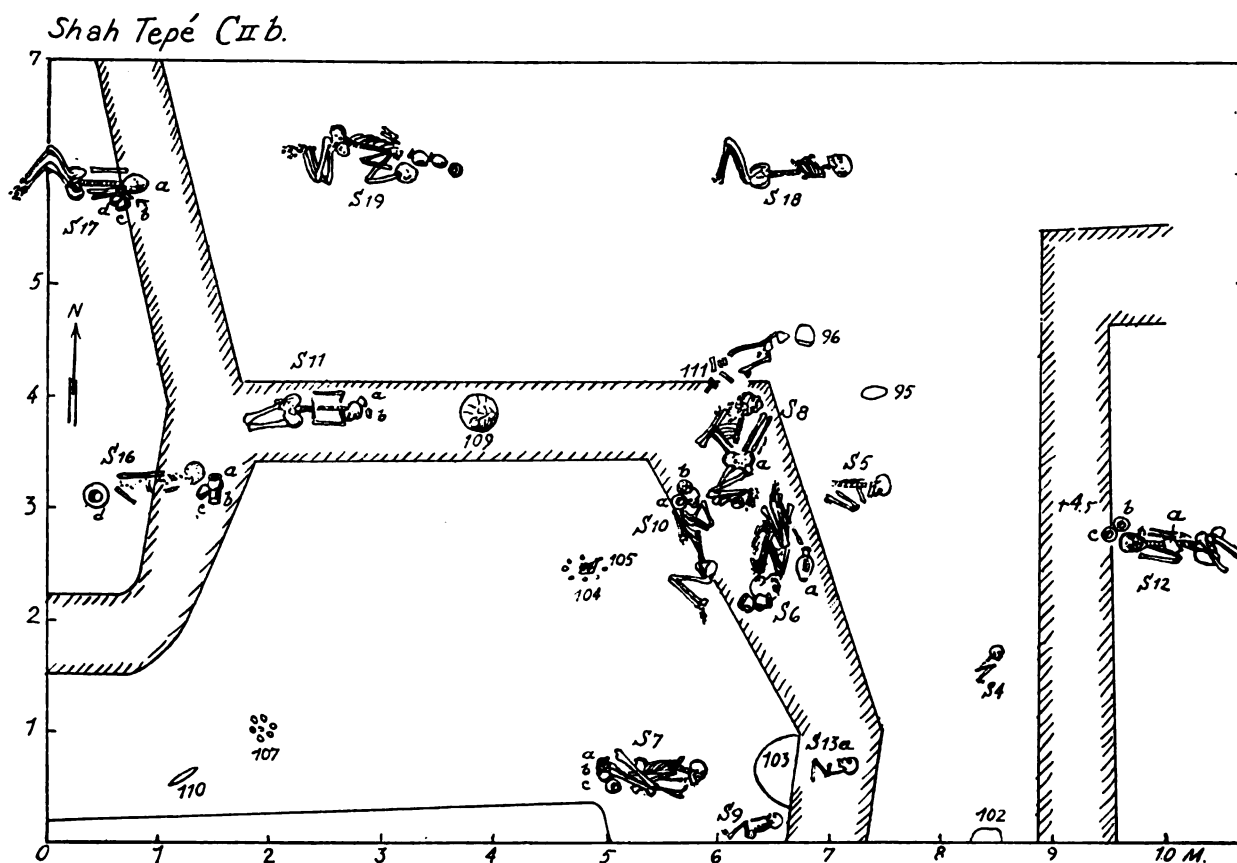


Fig. 26

dish cooking vessel(?) was observed in the north wall at +1.10 m. Of especial interest are a couple of feet to »fruit-bowls» and various spouts from biconical vessels.

Finally, we may mention also a large millstone from +0.70 m. (no. 686, C III, 116) and animal bones from +1.00 m. in the north-eastern corner.

Stratum II b (Figs. 26 and 27)

The pottery characteristic of stratum II b (the smaller part of stratum II), — cylindrical, egg-shaped, biconical and deep bowl-shaped black or black-grey vessels, as well as some of more globular shape with small vertical lugs — was found in a number of graves at the levels +1.30 to +2.75 m. (the graves C II S19, 18, 17, 10, 12, 13 6, 7 and 8). Connection with this group was shown, however, also by the considerably higher (+4.60 m.) grave C II S3^b, lying in the south-east corner and containing an ornamented cylindrical vessel. The graves S4, S5, S9 and S13^a (+3.10 to +3.20 m.) probably also belong here. They contained child skeletons without burial gifts.

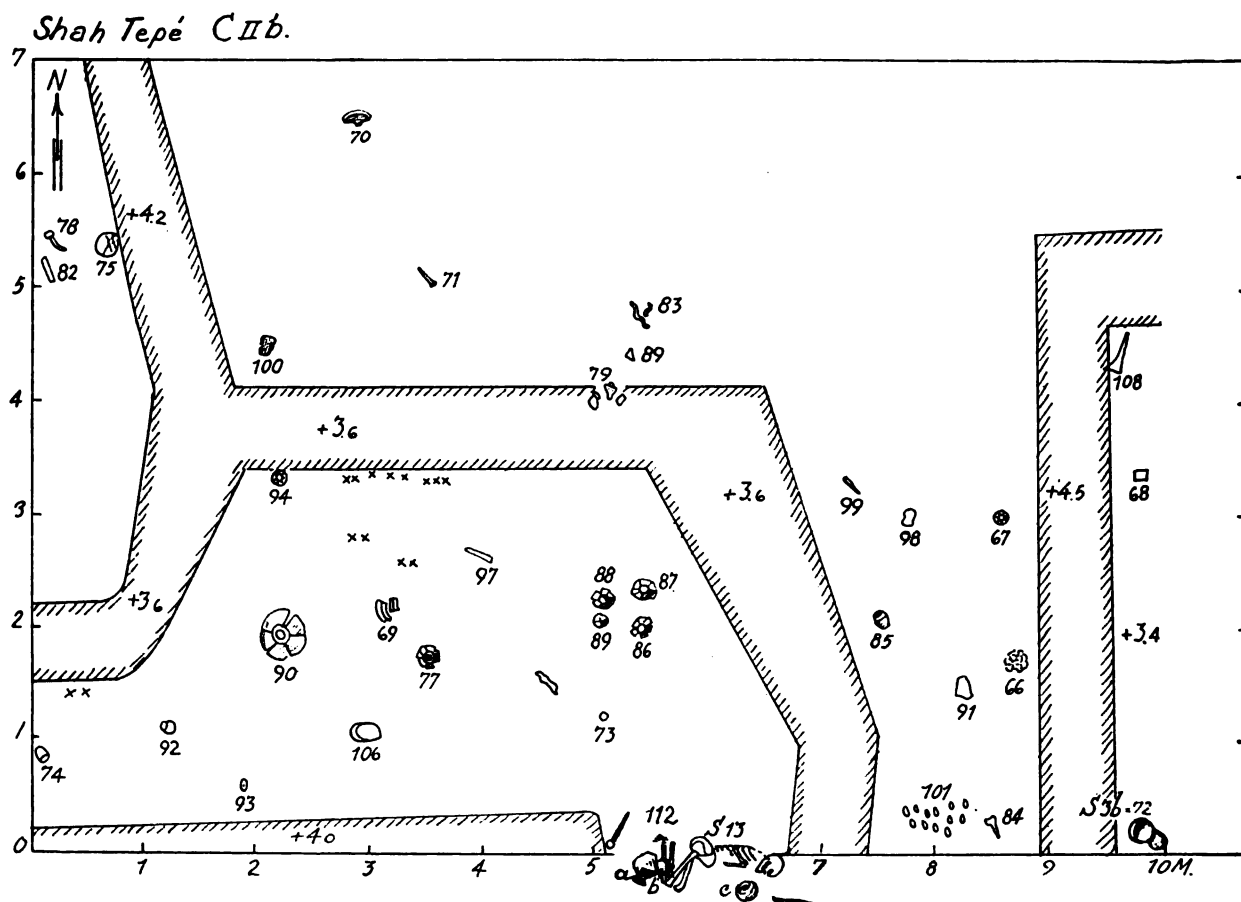


Fig. 27

Outside the graves and on the same level were found some objects of interest, such as a *copper pin* with spiral head (C II, 112, +2.50 m.), a *bone chisel* (C II, 110, +2.75 m.), a couple of *flint flakes* (C II, 114, +1.40 m.) and a torso of an *animal figure* in clay (C II, 118, +1.40 m.).

Partly above the graves mentioned here, in the western and southern parts of the shaft, lay *foundation-walls* of stamped mud (Fig. 27). These formed several rooms, one to the west, one to the south and one to the east. The yellowish clay wall to the east, which was about 0.60 m. in breadth and 5.5 m. in length, measured approximately 1.10 m. in height. The base lay at +3.40 m., the upper surface at +4.50 m.

The wall to the south room, which was broken by angles, attained various heights in its different parts (Pl. II, Fig. 28). To the extreme east, the wall seems to have been cut down, then its height only attained 3.60 m. Grave 10 lay under the wall —2.00 m., S⁶ and S⁸ at 2.75 m. (Pl. III, Fig. 29). Grave S^{13a} was farther to the south on top of the wall at +3.20 m. Immediately to the west of this skeleton and inside the wall was found a fireplace (C II, 103) +3.20 m. This wall was probably originally somewhat higher.

The continuation of the wall from east to west near the middle of the shaft seems to have reached a height of +4.60 m. In the eastern end of the wall at +4.20 m. were strewn a number of objects (II, 79), namely, an *ox-head of clay* (no. 379), a *flint flake* and a *black and red painted potsherd*. Farther to the west and under the wall we found the wide *foot* of a broken *black clay vessel*(?) (C II, 109, +3.30 m.), while still farther away lay a grave S II (+1.60 m.), which was not discovered until after the wall had been taken away and further excavation had been carried out. The northern part of the west wall lay about 0.40 m. lower than the southern part, which reached as high as +4.60 m. Finally, as regards the wall running along the south wall, of the shaft, this probably attained at most +4.00 m.

In the layer situated above the lower group of graves in stratum II and reaching as high as the uppermost surface of the walls (i. e. +3.20—+4.60 m.) were found, besides potsherds, a number of other loose finds. A *pin of lead* (C II, 78, no. 423) was discovered near the west wall at +4.00 m., a couple of fragments, a pin, a bent wire and a pointed implement-head of *copper* (C II, 80, 82, 83 and 99) at the levels +4.00—+4.20 m.). A *club-head of lime-stone* seems to have been found at the same or a rather higher level (under +4.60 m.). At +3.80 m., in the south-east part of the shaft, lay a collection of 29 »*sling-stones*» of burnt clay, all round, except one, which was biconical. In two places inside the »south room» lay collections of *flint balls*, the one (107) at +3.40 m., the other (104) at +3.20 m. Under the latter was discovered a human *lower jaw*. A *flint flake* was found in C II, 60, outside the eastern wall of the »south room» at +4.40 m. A *crucible* of sand and clay (no. 428 C II, 67) was found at +4.10 m., several *millstones* at +3.20, +3.30 m. (no. 443 C II, 95) one at +3.70 m. (no. 442 C II, 106) and one at +4.00 m.

At the same level (+2.75—+4.60 m.), outside graves, were divers clay vessels, some intact, some smashed and in fragments. A large *eggshaped vessel* lay in C II, 90, +3.60 m., and another one, *biconical* in shape, was found at the same level. Somewhat lower (+3.30 m.) was discovered the wide foot of a »*fruit-stand*» (C II, 109), and 1 m. higher up *another of the same kind* but in better condition (C II, 108). The most interesting find, however, was a round jug with a long *beak-shaped spout with horizontally-cut mouth* (no. 377 C II, 64), which lay at +4.30 m. Other broken *clay vessels* lay here and there inside the »south room», especially at the levels +3.60 to +4.20 m. To the east of this room, close to the east wall, were seen fragments of a couple of tall *cups* (+4.00 m.).

Stratum II a (Figs. 30 and 31)

At the levels +4.60 to +6.20 m. were discovered three prehistoric skeleton graves (C II S¹, 2, 3^a) at +5.80, +6.20 and +5.10 m. respectively. Apart from the single grave S^{3b}, there was thus a layer of almost 2 metre's thickness be-

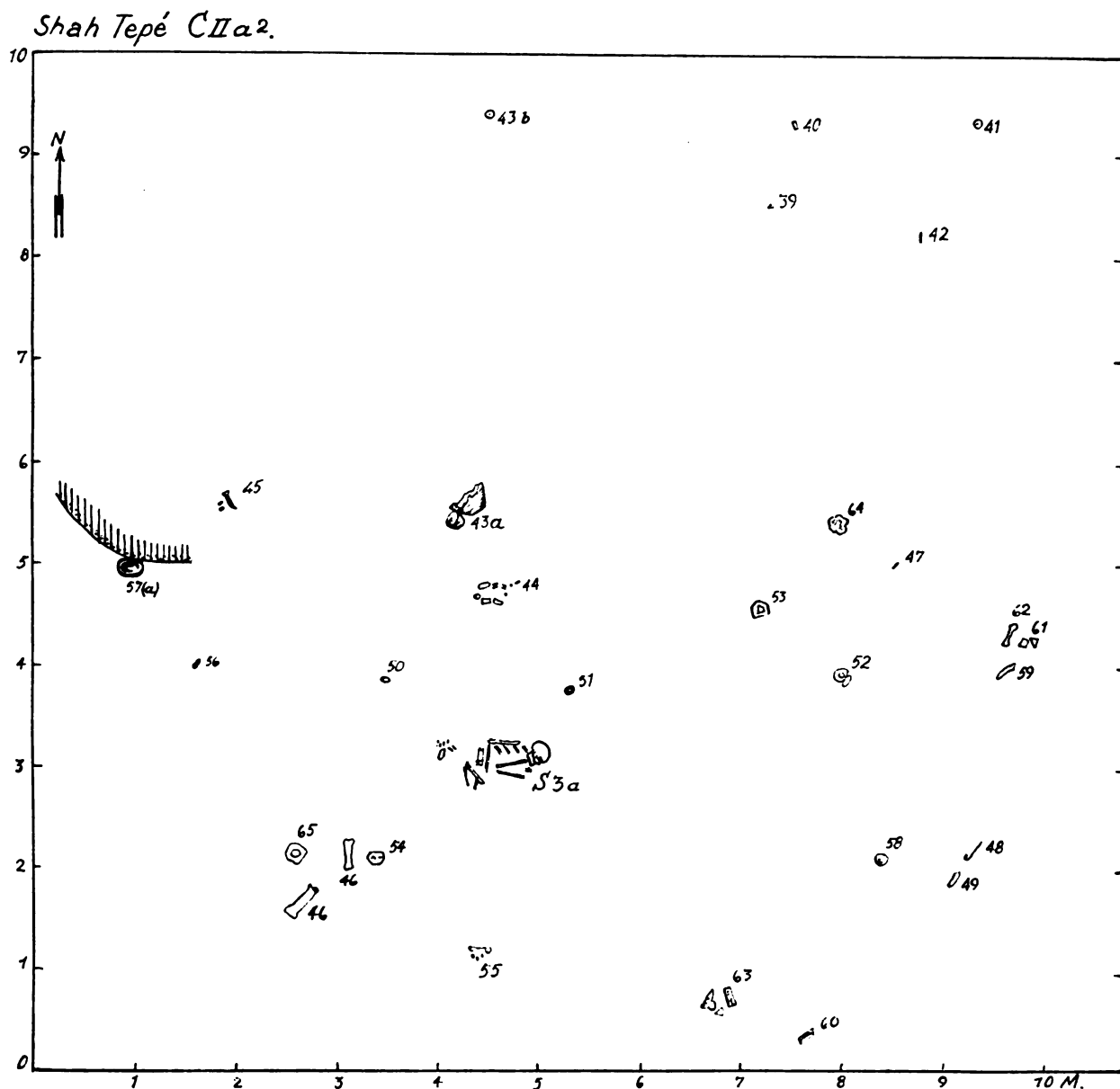


Fig. 30

tween the graves nearest each other in II b and II a. Only grave s 2 contained ceramic and other finds, and these were of a younger character than the pots with spouts generally characteristic of stratum II a. It would presumably be possible, on the basis of the wide bowls with broad, trough-like open spouts and the coarse cooking-pots with handles in five graves (in shafts, C, G and H), to mark of a *fourth prehistoric stratum* (as well as II, II b and II a); and to this could be added further some graves situated high up (in shafts E and F) and

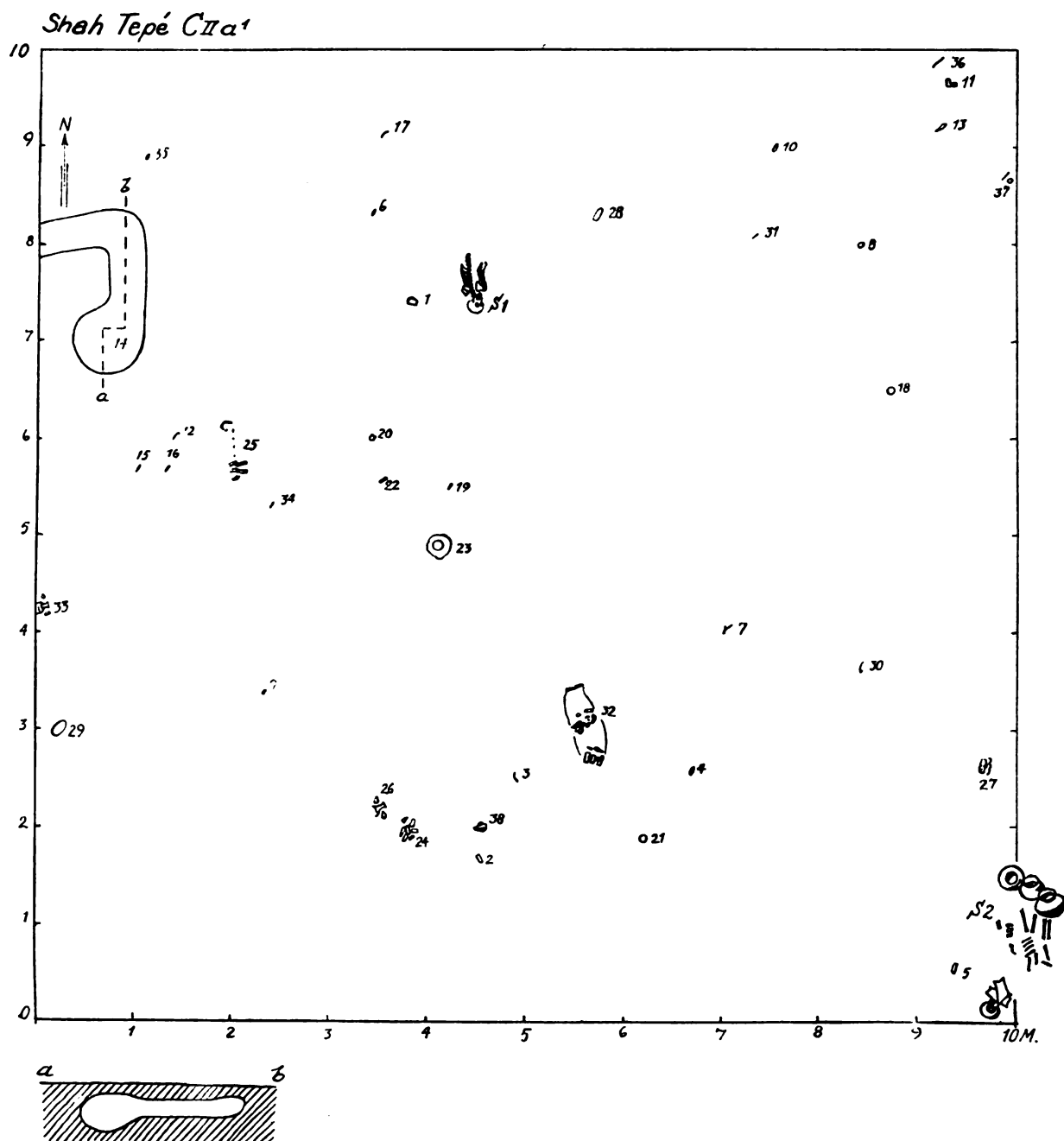


Fig. 31

containing rare forms of clay vessels. I should like to call this youngest prehistoric stratum a¹ in opposition to a².

Some observations of interest were made within the stratum II a. Near the west wall, at the level +4.70 m., was found a *layer of sand* (moulding-sand?), and immediately to the south and partly above this, earth mixed

with coal. Near the layer of sand lay a *crucible* of clay mixed with sand (C II, 57).

Near the south-west corner was found hard *stamped clay* (approx. +4.70 m.), which was at first taken to be a floor. It was probably the upper part of foundation walls lying beneath. *Black potsherds* of clay were plentifully represented here.

At about +6—+6.10 m. a kind of tunnel, roughly 25 cms. in width, appeared coming from above and from the west. After 1 metre the tunnel was bent almost at a right angle, and ran on to end in a round extended cave, which went down to +5.60 m. The length of the tunnel from the angle to and including the cave was 1.70 m. We presumed that this passage had been made by some wild animal.

A similar tunnel was seen at about the same height in the east wall, where the latter met the south wall.

In the south wall one could observe several thin layers of dark earth, mixed with coal, and between them a lighter clay. Especially was this the case at the levels +3.80—+5.20 m., where 5 such black thin bands of various extent could be distinguished. Immediately above +6.00 m. was a band of lighter clay, and still higher, in immediate contact with a couple of Mussulman graves lying on top of it there was a large reddish yellow, burnt part with traces of coal at the base.

The loose finds in stratum II a (+4.60—+6.20 m.) comprised some few *copper objects*, chiefly *pins* (C II, 56, 48, (with spiral head) 31, 36, 7) and a *spearhead* at +5.80 m., *flint flakes* (C II, 4, 6, 9, 10, 15, 16, 19, 32, 34, 35, 37, 40, 45 b, 49 50, most of these at +5.70 to +5.80 m.), *flat stones with holes in* (C II, 2), *pointed heads of bone implements* (C II, 71, 45 a), *spindle whorls*, intact and broken, *black clay vessels* (e. g. C II, 43 and C I, 24) and parts of *alabaster bowls* (C II, 1, 23). Here were found also fragments of *clay vessels with sieve-holes* (C II, 27 at +5.80 m.) and a bored *horn of black clay* (no. 374 C II, 59) perhaps in the upper part of II b. About 1 m. from the south wall, at +4.85 m., lay a number of bones belonging to cattle etc., as well as shells from *tortoises*, charcoal and potsherds, obviously a heap of kitchen refuse (C II, 55). Another similar heap lay 1½ m. farther to the north-west (C II, 54, 46). Here were found remains of clay vessels at +5.70 m., and beneath and beside these various *bones of animals* down to +5.20 m. In this shaft were further found *skeletons* of at least 4 *animals* (dogs and sheep) etc. at the levels +5.50—+5.80 m. (C II, 44, 32, 25, 24). An *animal skeleton* had already been found earlier in connection with grave 8 in II b.¹⁾

¹ Cf J. W. AMSCHLER, *Tierreste der Ausgrabungen von dem »grossen Königs-hügel« Shah Tepé in Nordiran*, p. 54, and T. J. ARNE, *Preface to FÜRST, The Skeletal Material* and J. W. AMSCHLER, *Tierreste etc.*, p. 11.

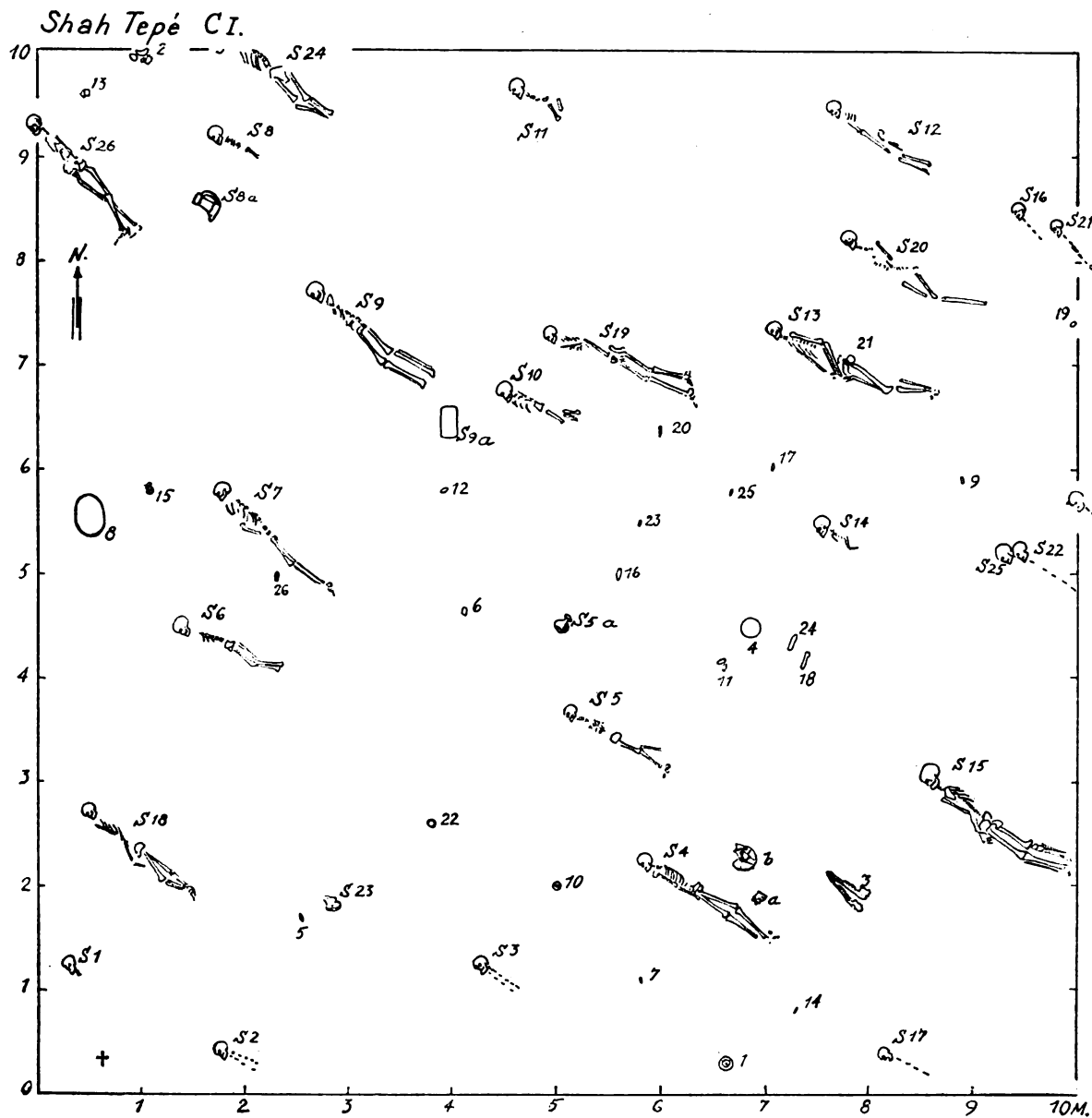


Fig 32

Stratum I. (Fig. 32)

At the levels $+6.20$ to $+7.10$ m., that is, at least $\frac{1}{2}$ m. below the surface of the earth were buried 26 individuals, all stretched out full length on the right side with the head pointing NW and the feet SE. The faces thus lay in a south-westerly direction towards Mecca. At least 8 of the skeletons belonged to children.

The lowest skeletons in the Mussulman stratum I thus lay at the same level as the highest in the prehistoric stratum II a.

It is only natural that finds should be rather mixed in the transition levels.

Mussulman objects had in some cases sunk deeper down. So, for instance, I suppose that a little square *brick* that had strayed as deep as +4.40 m. in the middle of the east wall (C II, 68) derived from the period of Mussulman settlement. I am in doubt as to a little *clay lid with knob* (C II, 41) which was found at +5.65 m.; it is possibly also Mohammedan. The same is probably also the case with a little yellow *spindle whorl or bead* of some glass-like substance (C II, 21 from +5.70 m.), and quite definitely as regards a fragmentary *glass bottle* (C II, 33) from the level +5.80 m. On the other hand, single prehistoric objects have in connection with the work of excavation chanced to be dragged up to a higher level. Such seems in all probability to be the case with some *flint flakes*, a *bone chisel* and a piece of *alabaster*. A couple of *millstones* (no. 178, CI, 8 and no. 115, S⁹ a) may certainly be Mussulman though they are just as possibly prehistoric. The *clay vessel* C I, 4 found at +6.45 m. is without doubt prehistoric.

It is uncertain whether some artifacts in this layer belonged directly to the graves. A fragmentary, ornamented *clay lid* (C I, 13), however, lay half a metre behind the head of S 26 but 0.70 m. higher than this. The large *neck of a clay vessel* (S⁸ a), on the other hand, was found at the same level (+6.90 m.) as the skeleton S⁸ and little more than $\frac{1}{2}$ m. in front of this. Behind S⁴ lay a small stone, on which had been placed *iron objects* and *glass fragments* (+6.70 m.). Quite near lay a beautifully *ornamented lid belonging to a clay vessel* (No. 113, +6.90 m.), and about 1 m. distant a *lower jaw*, probably of a *camel* (+6.60 m.). The first mentioned objects may possibly have some connection with the skeleton.

In this layer, moreover, were found quite a number of fragments of *glazed pottery* and *glass* of Mussulman origin.

Summary. (Fig. 34)

The oldest traces of settlement were met with in this shaft at -0.15 m. The oldest grave group, which generally characterises *stratum III*, reached up to +1.00 m. over the base of the mound, but the painted pottery went higher; and the articles and ruins that had belonged to the deceased during their life-times is naturally at a still higher level, at least $\frac{1}{2}$ m. The upper limit for *stratum III* has nevertheless been set at -1.20 m., as the graves belonging to *stratum II b* begin at +1.30 m. This latter stratum reaches up to +4.60 m. but above +3.20 m. there is only a single grave containing the pottery characteristic of the stratum. Between +4.60 and +6.20 m. lay *stratum II a*, but the group of graves belonging to it occurred only at the levels +5.10 to +6.20 m. A comparison with conditions in other shafts suggests reasons for a further division of *stratum II a*, into a group *II a*¹, whose boundary in shaft C should run somewhat under +5.80 m., and *II a*², between +4.60 and +5.80 m.

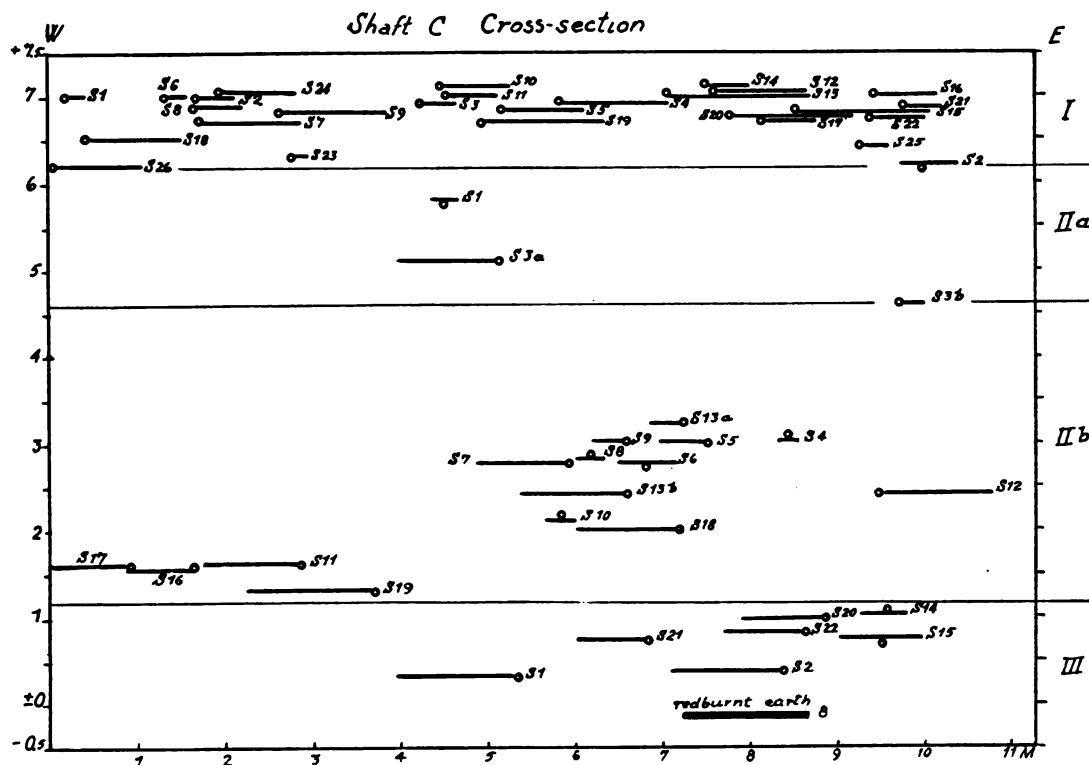


Fig. 34

Finally, at +6.20 m. we have *stratum I* with Mussulman graves up to +7.10 m., after which and up to the surface we have a layer of earth with scattered fragments of glass and pottery.

SHAFT E

The examination was begun on April 29th and finished on June 20th. The shaft lies nearest to C, and will for this reason be discussed here. On the excavation site itself shafts B and D were taken before E. The highest point in this shaft reached the level +8.11 m. The shaft was extended to an east-westerly length of 15 m., while the breadth, running N-S, was kept at the usual 10 m. The earth was thrown up little by little in 7 terraces, one on top of another, until the shaft was emptied.

Stratum III (Fig. 35).

Excavation was carried to a depth of -0.40 m. Below -0.20 m. the clay was green and damp, and formed lumps. Above this level the clay was more brownish, and had once been worked. Only the bones of animals were observed at this depth (-0.20 m.).

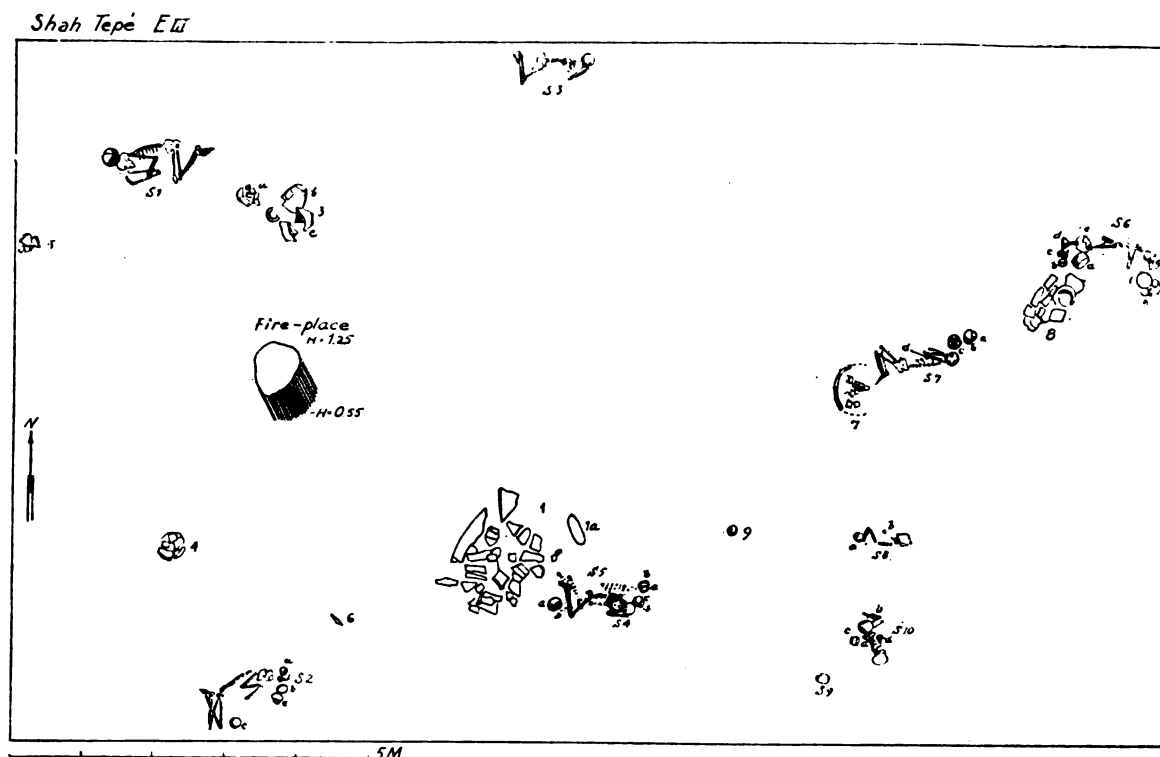


Fig. 35

Graves containing the pottery characteristic of stratum III (*jars and hemispherical bowls* of black or grey-black earthenware, as well as *small red and black painted vases*) were noted at levels from $+0.10$ to $+2.20$ m., in all, 7 to 8. There were in addition a couple of graves without finds. In three graves (*E III S⁸, S⁷, S⁶*) was also found painted pottery, at the levels $+2.10$, $+2.20$ and $+2.35$ m. respectively. Grave *E III S⁶*, however, contained predominantly pottery of younger type, and the little painted vessel with its once damaged but afterwards smoothed off lip gives the impression of having been out of service when it chanced into the company of its comrades. Judging by the graves, the boundary towards stratum II b may be set just at the level $+2.35$ m. The *painted pottery*, however, went still higher. At the level $+2.50$ m. lay numerous large fragments of such broken vessels (*E III, 1*). (Pl. III, Fig. 36 a). Another collection — a big storage jar — was met with in *E III, 7* at $+2.10$ m. (Pl. III, Fig. 36 b). The upper boundary for stratum III thus goes no higher than $+2.50$ m. *Black pottery* of great interest was discovered within stratum E III. We found there, for example, a couple of bowls from «fruit-stands» from which the feet had been knocked off (nos. 1301 and 1216, *E III, 5* and *4* at $+1.00$ and $+1.10$ m. respectively) a *little jar* of the same kind as those met with in the early graves (*E III, 9* at $+1.00$ m.) and at $+1.85$ m. a collection of broken vessels, amongst which were the «cuppa» of a tall «table-lamp»,

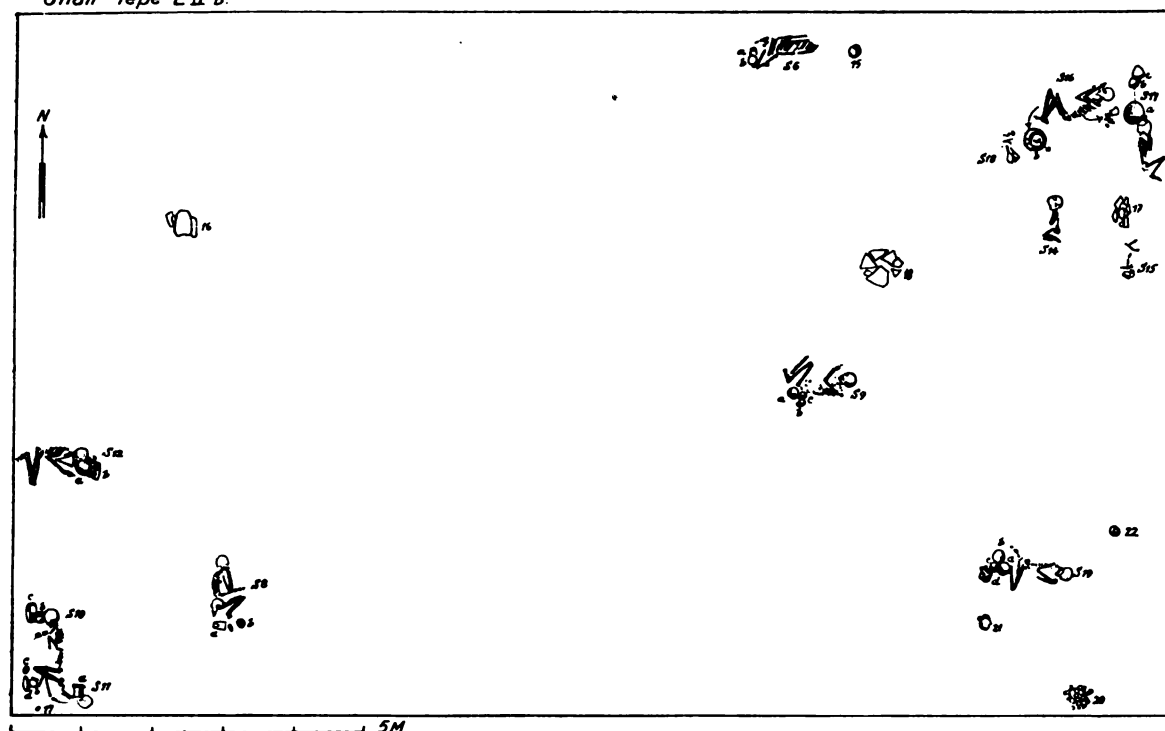


Fig. 37

a biconical vessel with open spout and a deep bowl (nos. 1164—1166, E III, 3). The lastmentioned finds are chronologically connected with the following period II b. The broken objects had perhaps been thrown down a well. A clay vessel with rather narrow and high neck, growing larger towards the mouth, and with two bent handles on the shoulders seems also to have been found in this layer (Fig. 425 a). It is very obviously hand-made and built up of rings of clay laid concentrically one upon the other. The walls of the vessel varied in thickness. Finally, we may mention an enormous, black round jar (E III, 8), found at +1.80 m. (Fig. 302 a). A millstone (no. 1122, E III, 2) some copper-objects, 2 clay statuettes of animals and bone implements were otherwise the only loose objects of any importance in this layer. A clay fire-place, thoroughly charred, was found at the level +1.25—+0.65 m. Deserving of mention is the fact that the only find of silver was made in grave E III S⁸. This took the form of earrings. In grave E III S⁸ lay a spiral arm-ring of copper.

Stratum II b. (Fig. 37).

In this were found, besides the transition grave E III S⁶ (+2.35 m.), the graves E II S¹⁹ (+3.00 m.), S¹² (+3.00 m.), S¹¹ (+3.20 m.), S¹⁰ (+3.80 m.), S⁸ (+4.00 m.), S¹⁶ (+4.00 m.), S¹⁷ (+4.40 m.), S⁸ (+4.65 m.), S⁹ (+4.70 m.), thus 10 graves

with the characteristic pottery (*cylindrical, egg-shaped, biconical vessels, round vessels provided with lugs and deep bowls*). The limits are +2.35 and +4.70 m.

Outside the graves occur also some clay vessels of black or grey earthenware. Noteworthy are a *large dish* (E II, 18) from +3.20 m., a little *jar* (E II, 22) from +3.50 m., of a type that is otherwise met with only within stratum III, the large brown, canteen-shaped «*snake-vessel*» (E II, 20) found at +4.65 m. (i. e. close to II a), and a tall *cylindrical vessel* (E II, 17) from +4.70 m. A brownish, rather blackened *vessel* without handle, found upside down, (E II, 15), seems to be a prototype of the younger cooking vessels with handle (+4.15 m). A little higher up lay bits of another large *black clay vessel*. A round, *black vessel* in a fragmentary condition had, besides a neck, a handle which ran from the mouth to the middle of the belly (E II, 21 at +4.50 m.)

In the same layer were found a further *three graves* with child skeletons (E II, S¹⁴, ¹⁵, ¹⁸), but without burial gifts.

Stratum II a (Fig. 38).

The topmost graves in this stratum were mixed with graves in stratum I, so that the highest situated II a-grave (E II S⁴) was found at +6.40 m. and the lowest situated I-grave (E I S²⁶) at +6.0 m. Below +6.00 m. and above +4.70 m. lay the graves E II S⁷, ¹³, ⁵ at +4.90, +5.00 and +5.30 m. respectively, and above +6.00 m. the graves E II S³, ¹, ², ⁴ at +6.10, +6.20, +6.30 and +6.40 m. respectively.

Of these graves, E II S¹³, ⁵, ³ and ¹ contained characteristic *pots with spouts*, while the graves S¹ and S¹³, lying almost one above the other, contained *triple pots with spouts*.

The graves E II S² and S⁴, which were situated high up, contained no pots with spouts, but a *chalice* on a conical base, a round-bottomed *carafe* and two *egg-shaped vessels*. They nevertheless had links associating them with forms in the richly garnished grave E II S³.

In the last-mentioned grave one observes a squat, *biconical vessel* with a sharp rimmed belly, which is in close agreement with a vessel in Grave C III S¹. The latter constitutes an exception in that it is ornamented with vertical ornaments in the same way as the painted pottery, while the vessel in E II S³ is decorated in the ordinary way in horizontal zones.

In E II a, outside the graves, were found a number of *rounded eggshaped or globular clay vessels* with short necks at levels from +5.30 to +6.30 m. (E II, 13, 7, 8, 10, 11, 12), as well as fragments of clay vessels.

Other finds in stratum II have only in exceptional cases been levelled and included in the plans. More or less similar objects were, however, found throughout. A couple of *millstones* (no. 1124, E II and no. 1125 E II (mortar or door-socket) were found (left behind in Teheran), at least 33 *flint flakes*, 18 intact or fragmentary objects

Shah Tepé EIIa.

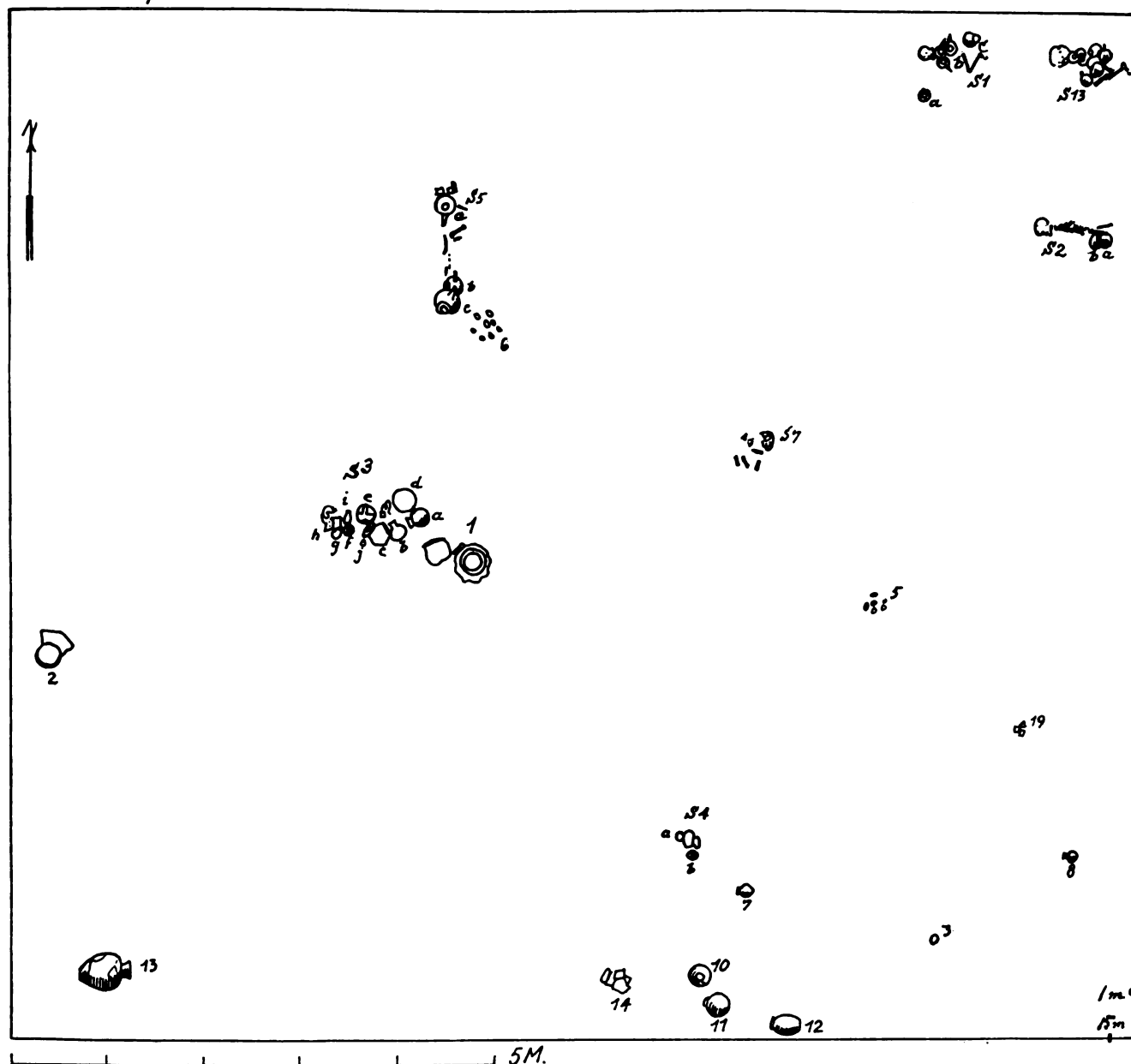


Fig. 38

of *copper*, mostly pins and awls, 26 chisels, awls and pins of *bone*, some round sling-stones of burnt clay, an *animal figure of clay*, some clay beads, clay wheels and thin stone discs with holes, spindle whorls and 2 clay lids to smaller vessels. At +5.60 were found fragments of the *skeleton of a ruminant*. A little spindle whorl of bone ascribed to E II (no. 604) belongs undoubtedly to stratum E I.

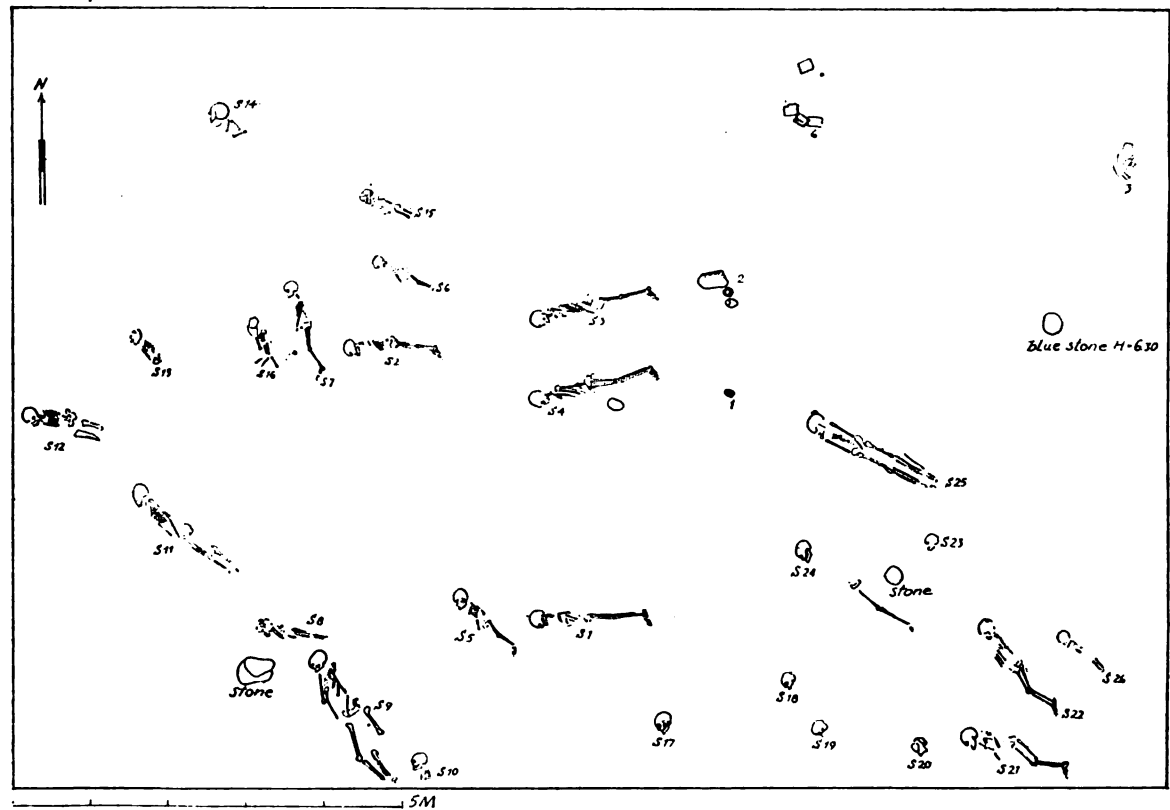


Fig. 39

Stratum I. (Fig. 39).

At a depth varying between +6.00 and +7.00 m. were found 26 Mussulman skeletons, stretched out full length. (Pl. III, Fig. 40). The majority belonged to children. Of these skeletons 4 lay at the already mentioned dividing level of +6.40 m., 2 below the same, while 20 lay above, half the number being found at +6.80 m. The corpses had in general been buried about 1.20 m. under the present surface of the tepé, sometimes deeper; but one is probably justified in assuming that the mound has grown somewhat since at least the oldest of the graves were dug.

In this shaft were discovered *four bricks*, which of course belong to Mussulman time; further, a couple of small *glass bottles* (E I and nos. 605 and 606), 3 *iron fragments* (nr. 607), two plane convex *spindle whorls of bone* (nos. 508 and 518) and a cylindrical conglomerate of *silver coins*, which afterwards proved to be a heap of 12 Omayyad and Abbasid coins from the 8th century A. D. (no. 597, + 6.30). It is possible, though not absolutely certain, that also some *millstones* found near the graves E I S³, 4, 8, 24 (+6.40—+7.20 m.) belong to

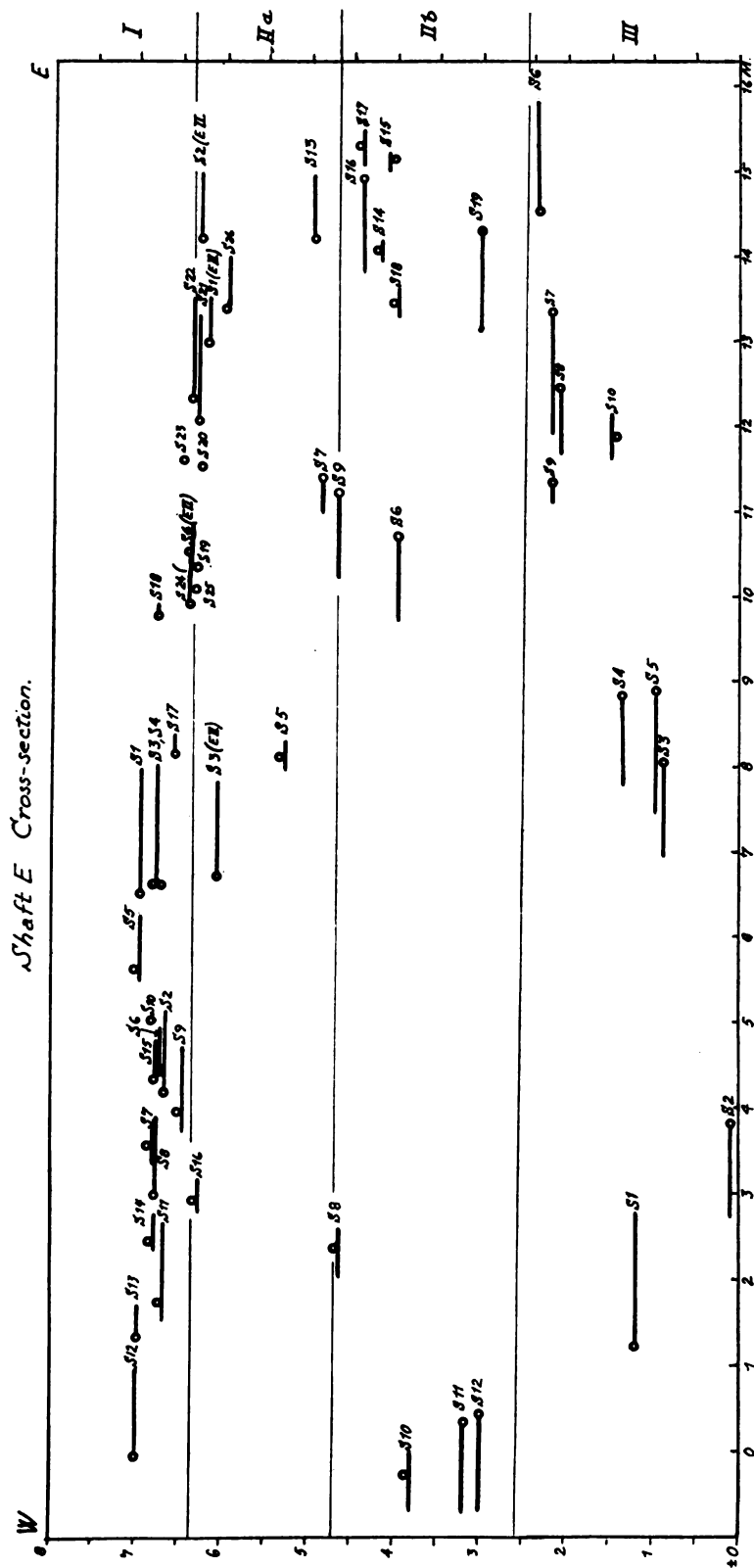


Fig. 41

Mussulman time. Open to doubt are also certain *copper* or *bronze fragments*. The *flint flakes* (nos. 519, 520, 530), on the other hand, which were found in the topmost layer, seem undoubtedly to be prehistoric.

Summary.

As appears from the above, the boundary between the various strata runs as follows: *stratum III* from +0.10 m. to +2.50 m., *stratum II b* from +2.50 (or +2.35 m.) to +4.70 m., *stratum II a* from +4.70 m. to +6.40 m., *stratum I* from +6.40 m. (or +6.00 m.) to approximately between +7.20 and to +8 m. (Fig. 41 and Pl. III, Fig. 42).

SHAFT F

The whole surface of this shaft lies above the 7-metre curve with the highest measured points of +7.75 and +7.91 m. The work of excavation was begun on May 6th and completed on June 1th.

Stratum III (Fig. 43).

The shaft was dug over down to something under the O-point. The deepest situated grave F III S²¹ was found at +5 cms. above this point. The *black pottery* characteristic of the graves within *stratum III* — the *squat jars with low, wide necks* and the more or less *hemispherical bowls* — was found in six graves from +0.05 m. to +2.95 m. (F III S²¹, S¹⁹, S¹⁸, S⁹, S² and S¹). In the last-mentioned grave, at +2.95 m., was also found a little *black and red painted pot*, the only whole pot found in these graves. But beside the skeleton fragments F III S³—S⁷, which were arranged in a ring, lay single pieces of *painted earthenware*, as well as numerous fragments of *black clay vessels*, and some of *coarse and mottled ware* at a height of +1.95 to +2.25 m. It was also at the levels +2.25 to +2.30 m. that the most painted earthenware outside the graves was met with; but we also found this together with black earthenware at +0.75 m.

The graves F III S²⁰, S¹⁷, S¹², S¹¹ and S¹⁰, possibly also S⁸, all without finds, probably also belong here. The pottery in the graves F III S¹³ and S¹⁶, found at the levels +2.25—+2.30 m., and presumably also the damaged ones S¹⁴ and S¹⁵, has, on the other hand, definitely the appearance of belonging to *stratum II b*. The boundary between the strata III and II b runs between +2.25 and +2.95 m., and has in any case in the south-east corner reached the latter level.

In several places in F III were observed *burnt or charred surfaces*, which had presumably been floors in prehistoric dwellings. From the north part of the west wall, towards the centre of the shaft, extended such a region (F III, 19) at a level of about +2.55 m. The surface was composed of packed, red-burnt clay,

Shah Tepé' F III

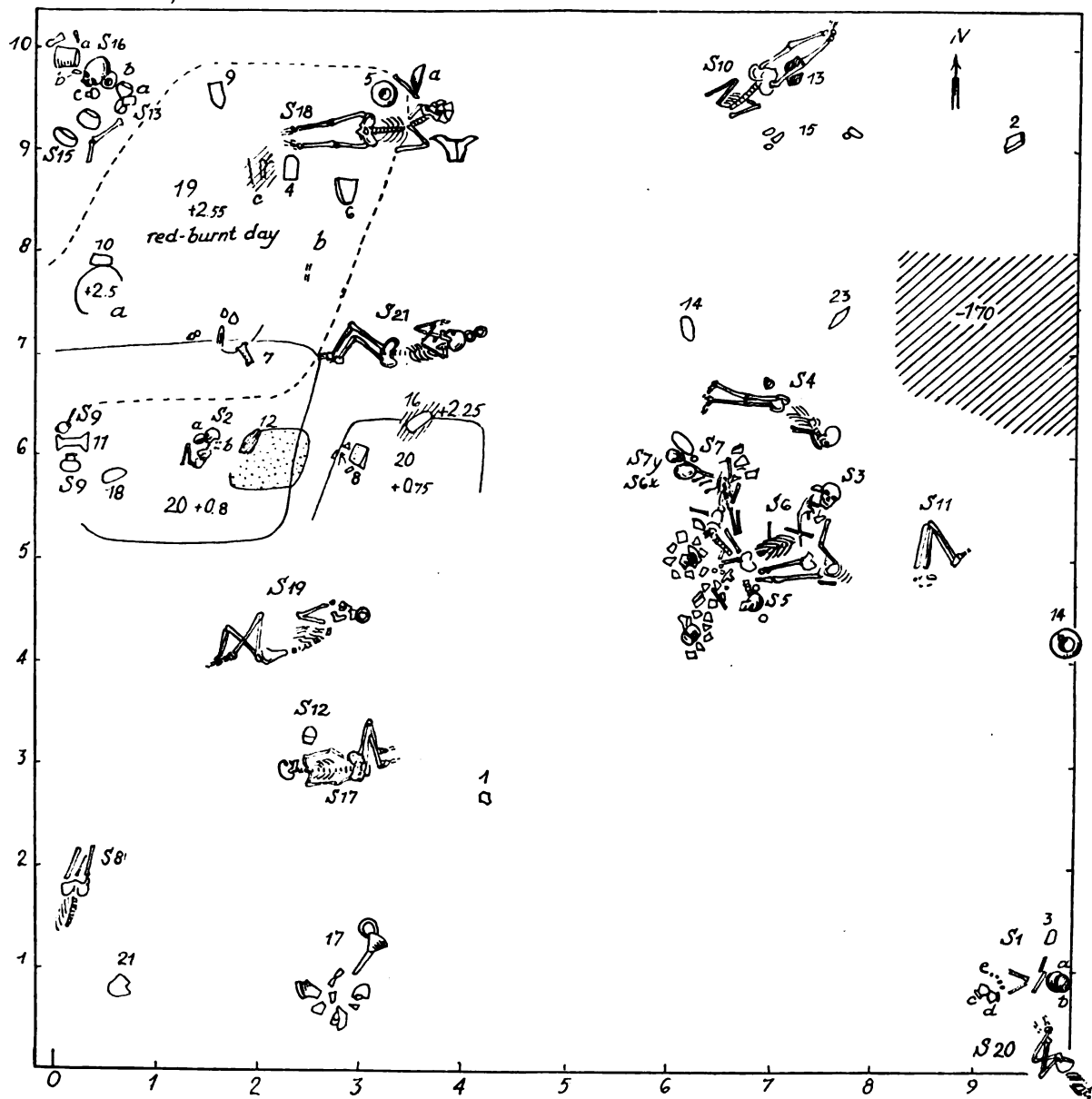


Fig. 43

shot through with streaks of black soot. The region measured approximately 3×2.5 m. Partly covered by this clay, and partly lying above it were discovered a lot of fragments of clay vessels. On the western edge, stretching over 0.95×0.60 m., were discovered pieces of a broken red, brick-like jar, possibly a sort of oven (+2.50 m.). Just to the north of this jar, at +2.65 m., lay a flat stone (millstone), and four stones were placed at the edges of the region (4, 5 (a doorsocket), 6, 9, at +2.85, +2.55, +2.55 and +2.45 m. respectively). In the middle

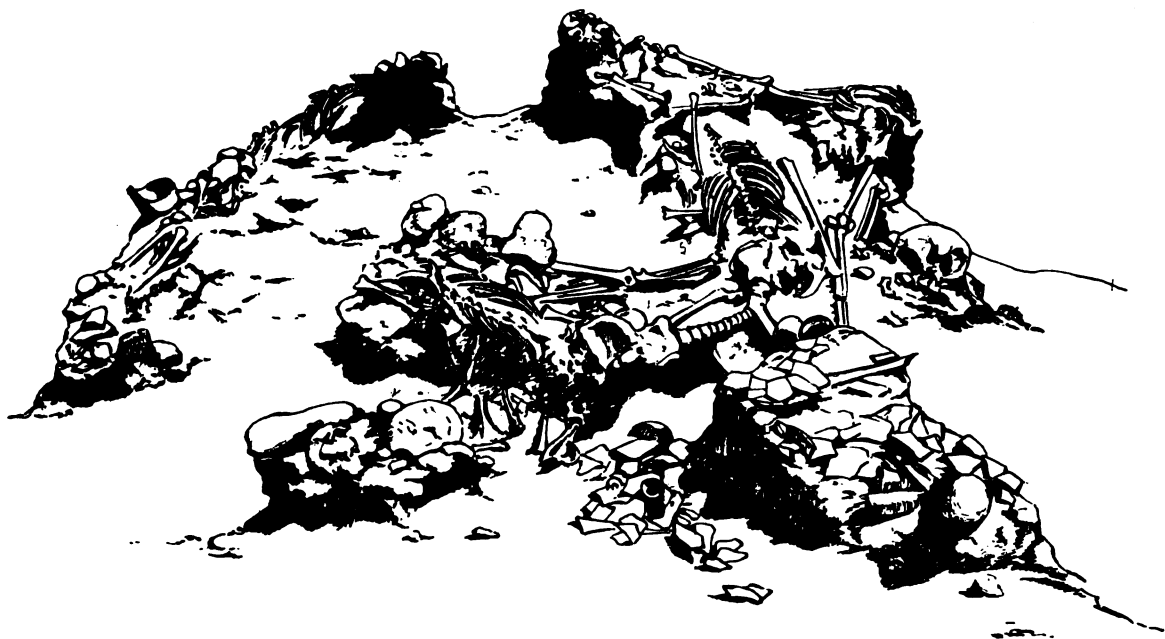


Fig. 45

of the region were found remains of a large *black clay vessel* with a flat upper rim, while still farther to the east were the remnants of a painted *red and black clay vessel*. The stones 4 and 6 lay outside. The black-red vessel probably contained the *skeletal remains* of an embryo, or possibly of a new-born child. *Black earthenware* was also found strewn about in this region. Especially worthy of note is the *foot* of a *black clay vessel* (F III, 7, +2.75 m). To the south-east of this surface lay a *large stone* (F III, 16), about 20 cms in height. The stone was found on a support of well-burnt clay mixed with coal at +2.25 m.

Both to the north (in the region of shaft G) and to the south of the «floorsurface» mentioned here was found *hard-packed clay flooring* (F III, 20) though considerably deeper, namely, at a level of approximately +0.80 m. (Pl. III, Fig. 44). Above the more southerly floor was observed a fire-place(?) of redburnt clay- (F III, 12) at +2.35 m. At its eastern edge stood a *black and red painted biconical clay vessel* (F III, 8). The grave F III S² lay immediately to the west of the fire-place, while somewhat farther away, towards the western wall, lay the foot of a large *clay vessel* (F III, 11, +2.45 m.). Just inside the east wall was seen also a coal layer at a height varying between +2.10 and +1.70 m.

Of especial interest are the two already mentioned *collections of skeletons* which occur within this stratum, to wit, the five human skeletons (Fig. 45 and Pl. IV, Fig. 45 a) lying near the middle and arranged in a circle (F III S³—S⁷) and the four (or three) damaged skeletons F III S¹³—S¹⁶), which lay in the north-west corner (Pl. IV, Fig. 46). The level was in both cases roughly the same, at the most +2.30 m.,

Shah Tepé FII b.

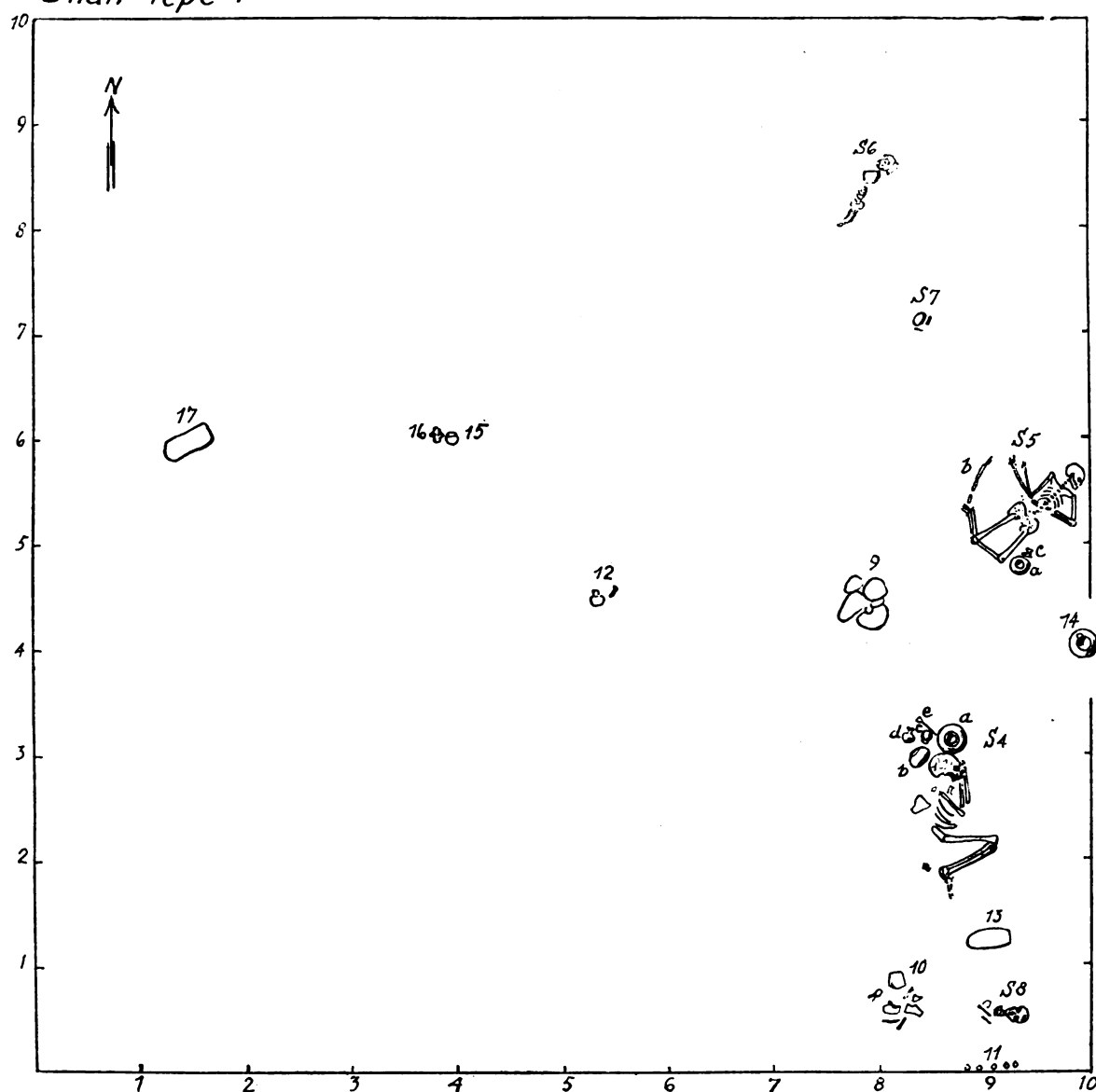


Fig. 48

and at the least $+1.95$ m. Among the first-mentioned collection were found large numbers of *bones* belonging to *domestic animals*, especially sheep, and many sherds of different pottery. It was also in F III that a cranium of a *wild short horned bull* was found just to the east of the big clay floor at a level of $+2.00$ m.

At the lower levels $+0.75$ to $+0.90$ m. was discovered a depot (F III, 17) containing a number of broken clay vessels, the majority of black earthenware (Pl. IV, Fig. 47). Among these was a *bowl or lamp on a tall »foot«* and a *biconical vessel with open spout*, as well as large pieces of *black and red painted earthenware*.

It should be remarked that in this layer near the north-eastern corner was found also a rectangular *brick* (F III, 2) at +2.70 m. It had presumably slipped down from the Mussulman layer.

At the lowest depth, at +0.05 m. above the base, lay a chipped *arrowhead of flint*, the only one of its kind (F III, 23). *Flint flakes*, on the other hand, were common — 52 of these were brought away. Seven *objects of copper* were found, most of them being pins. A piece of *slag* from +1.15 m. proved on examination to consist of silica without admixture of heavy metals. It has not been possible to determine what intention lay behind this smelting, but it is possible that it was a chance by-product of clay vessel burning. The melting-point was very high.¹

Stratum II b (Fig. 48).

Except for the graves *F III*, *S*¹³—*S*¹⁶, which were dug at the level of *F III* (+2.35 m.), although they contain *typical F II pottery*, the grave complex of stratum *F II* begins at +3.90 m., being thus separated by an almost metre-thick layer from the highest situated graves belonging to *F III*. To stratum *II b* belong only 5 graves (*F II S*⁴—*S*⁸) at the level +3.90 — +4.55 m., and of these, only two (*F II S*⁴ and *S*⁶) contain pottery, and even this is not very typical. The cross between a plate and a bowl that together with fragments of other vessels was taken from grave *S*⁵ corresponds to a couple of bowls that were found isolated in *F III*, 19 and *F III*, 3 at +2.55 and +2.70 m. respectively, thus quite high up in this stratum.

A spherical carafe of *blackish grey clay* from +3.90 m. (*F II*, 12) is not typical of stratum *II b* but rather of *II a*.

On the other hand, however, the rather tall *round bowl* *F II*, 15 is certainly at home in this stratum (+3.80 m.).

Of great interest are a *woman's torso* of black clay (*F II*, 16 from +3.80 m.) and two *animal figures* in the same material (Nos. 1374 and 1375). The exact finding-place for these is uncertain;¹

A couple of large *millstones*(?) were found in the west and south-east parts of this layer (*F II*, 17 and 13 at +3.70 m. and +3.30 m. respectively); also a *heap of stones* (*F II*, 9 at +4.30 m.) and an *arrangement of stones* (*F II*, 11 at +4.40 m.)

The limits of stratum *F II b* are thus +2.25 m. as the lowest point and +4.55 m. as the highest.

Stratum II a (Fig. 49).

Also within this stratum the graves are few and situated between +5.20 and +6.80 m. *F II S*¹ is at +6.80 m., thus in the *F I* stratum, while *F II S*²

¹ Information supplied by GILLIS OLSSON, Esq. Technical Assistant at the Historical Museum.

¹ The two animal figures were entered as newly found in the inventory on June 5th 1933, while grave *F III S*¹ from +2.95 m. was entered the previous day, together with late finds from *F II*.

Shah Tepé' FIIa.

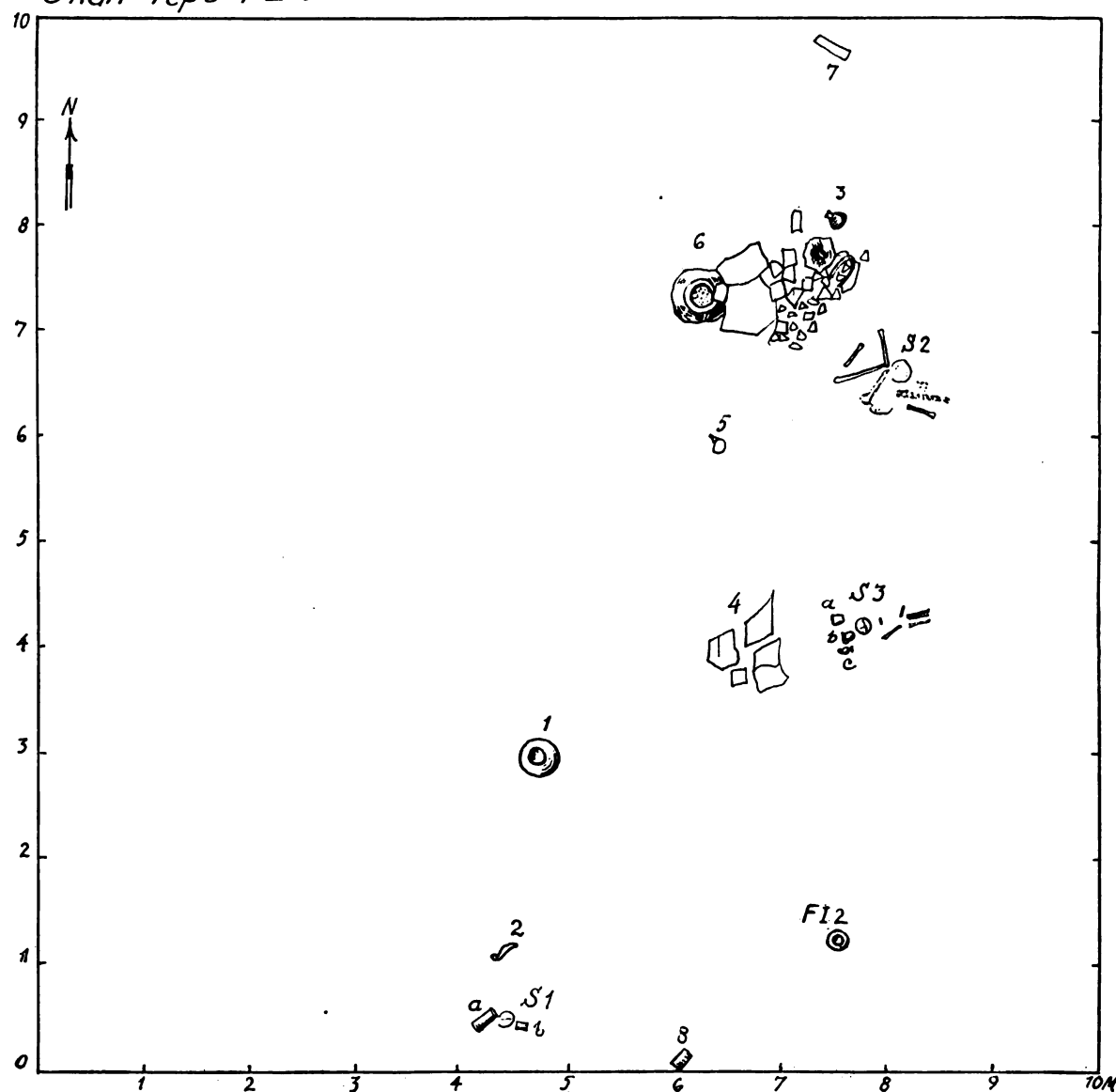


Fig. 49

and S^3 lie at +5.80 and +5.20 m. respectively. The characteristic *tea-pot form* appears in the last-mentioned grave, together with a little *footed vase*, a companion to which occurs in G II a. Together with a tall, *cylinder-shaped vase* of clay there occurs in F II S^1 a cylindrical *alabaster vase*.

An *alabaster cup* (F II, 8) was also discovered at a lower level, namely, at +4.70 m., together with fragments of another *alabaster vase*, and still another *cylinder-shaped alabaster vase* (F I, 2) lay at +6.00 m.

Isolated *clay vessels* of special types occurred at the levels +4.70—+6.60 m.

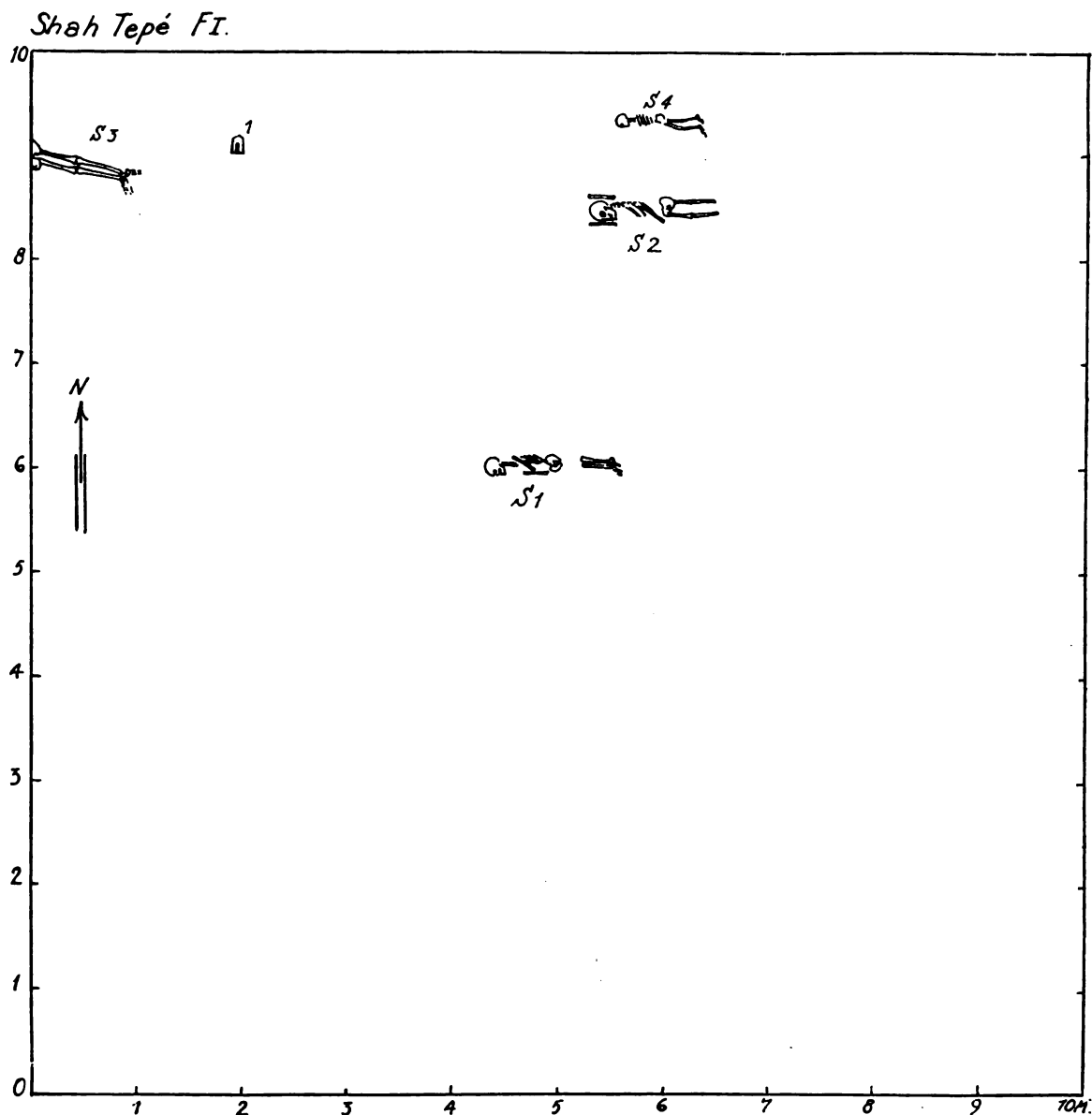


Fig. 51

Among these should be mentioned here a *globular clay carafe* (F II, 3) similar to that met with at +3.90 m.

Worthy of note are also a couple of larger collections of *broken clay vessels* (F II, 4 and 6). F II, 4, which was found at +5.80 m., probably derived only from a single large clay vessel, but in F II, 6, to the north-east of the centre and at +5.30, were found remains of a large number of such vessels, including a black, *very large urn with burnished ornaments* (Pl. IV, Fig. 50 a, b). Stratum II a is thus probably to be reckoned as between +4.55 and +6.80 m.

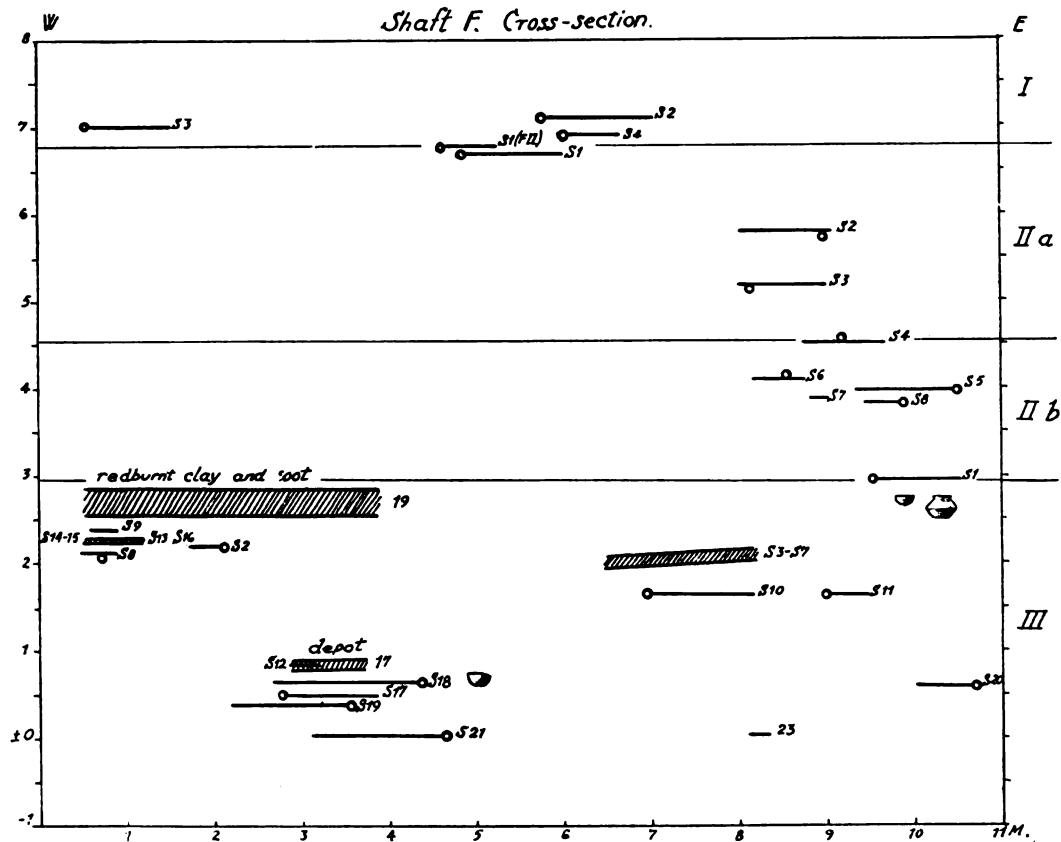


Fig. 53

In F II were found 17 objects (mostly fragments) of *copper*. Only in one or two exceptional cases can the exact finding-places for these be defined. So, for example, a *copper pin* with triangular, flat head in grave F II S⁴ at +4.55 m. and a crescent-shaped *razor*(?) in F II, 2 at +6.60 m. For the rest, these finds comprised chiefly *pins*, *awls* and *rivets* (tacks). Prominent were *bone implements*. In F II were found 16 chisels, awls, daggers etc., in F III 13 specimens.

Stratum I (Fig. 51).

Three *Mussulman graves* and the skeleton of a child (S⁴) were discovered at the levels +6.70 to +7.10 m., that is, about 1 metre below the surface. The *Mussulman dwelling layer* must have been rather thin, the more certainly as the youngest prehistoric grave was found 10 cms. higher than the lowest *Mussulman* grave. One of the skeletons in the *Mussulman graves* (FI S²) was particularly interesting, as the cranium was flanked by a couple of vertical bricks with the width 19.5 cms (Pl. IV, Fig. 52). At the side of the skeleton lay several pieces of *glazed earthenware*, and in the same layer was found a *Byzantine clasp*. On the whole the finds in stratum I were rather few and of slight interest.

Shah Tepé' GIII.

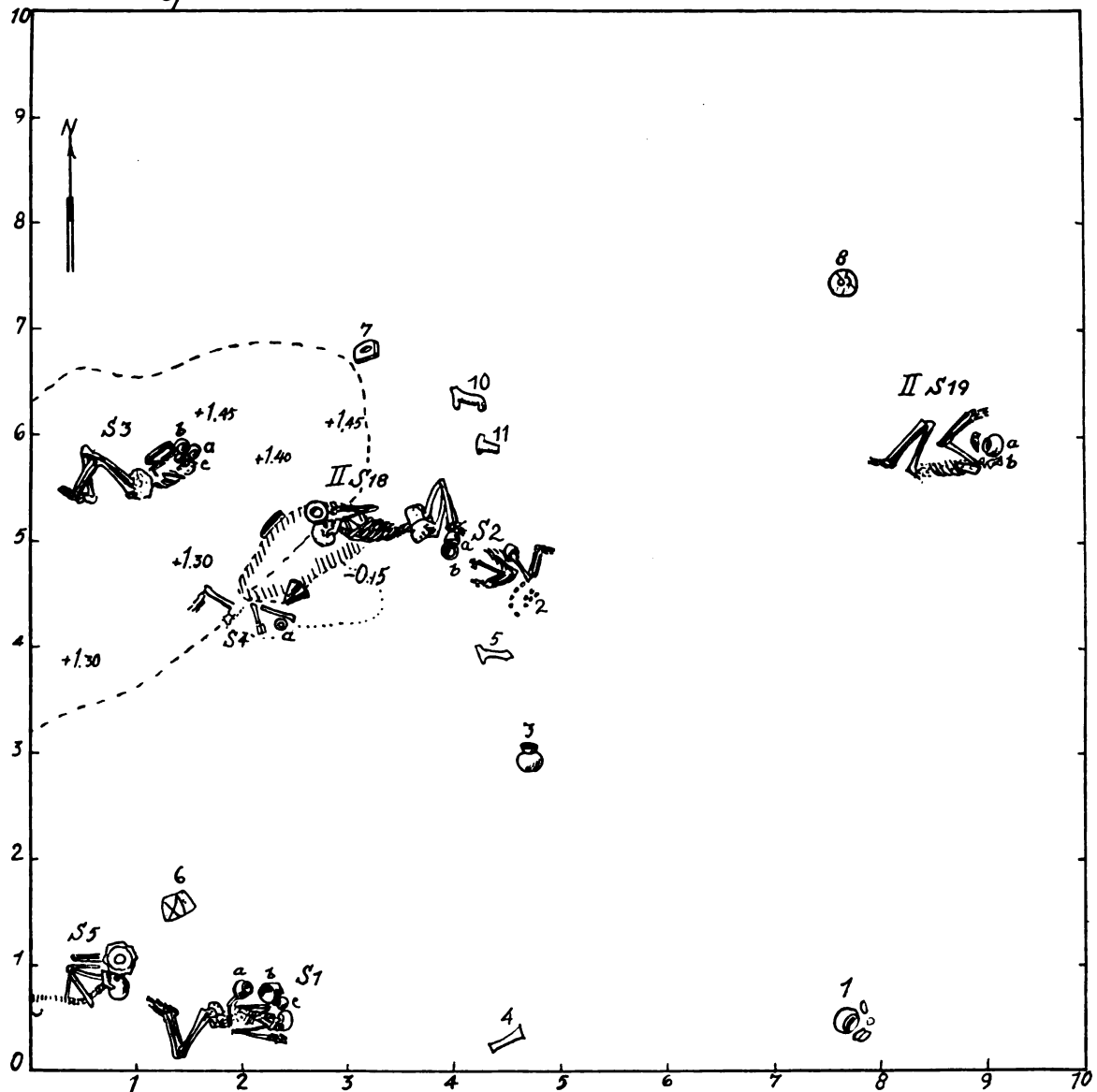


Fig. 55

Summary.

Stratum III extended in shaft F from the base of the mound to almost +3 m.; stratum II b from approximately +3 m. to +4.55 m.; stratum II a from +4.55 m. to +6.80; while finally, stratum I extended from +6.70 m. (or +6.80) to the surface. In this connection it must be borne in mind that the boundaries are rather elastic, and that the actual settlement during a certain period is always on a somewhat higher plane than the graves (Fig. 53).

Shah Tepé' GIIb.

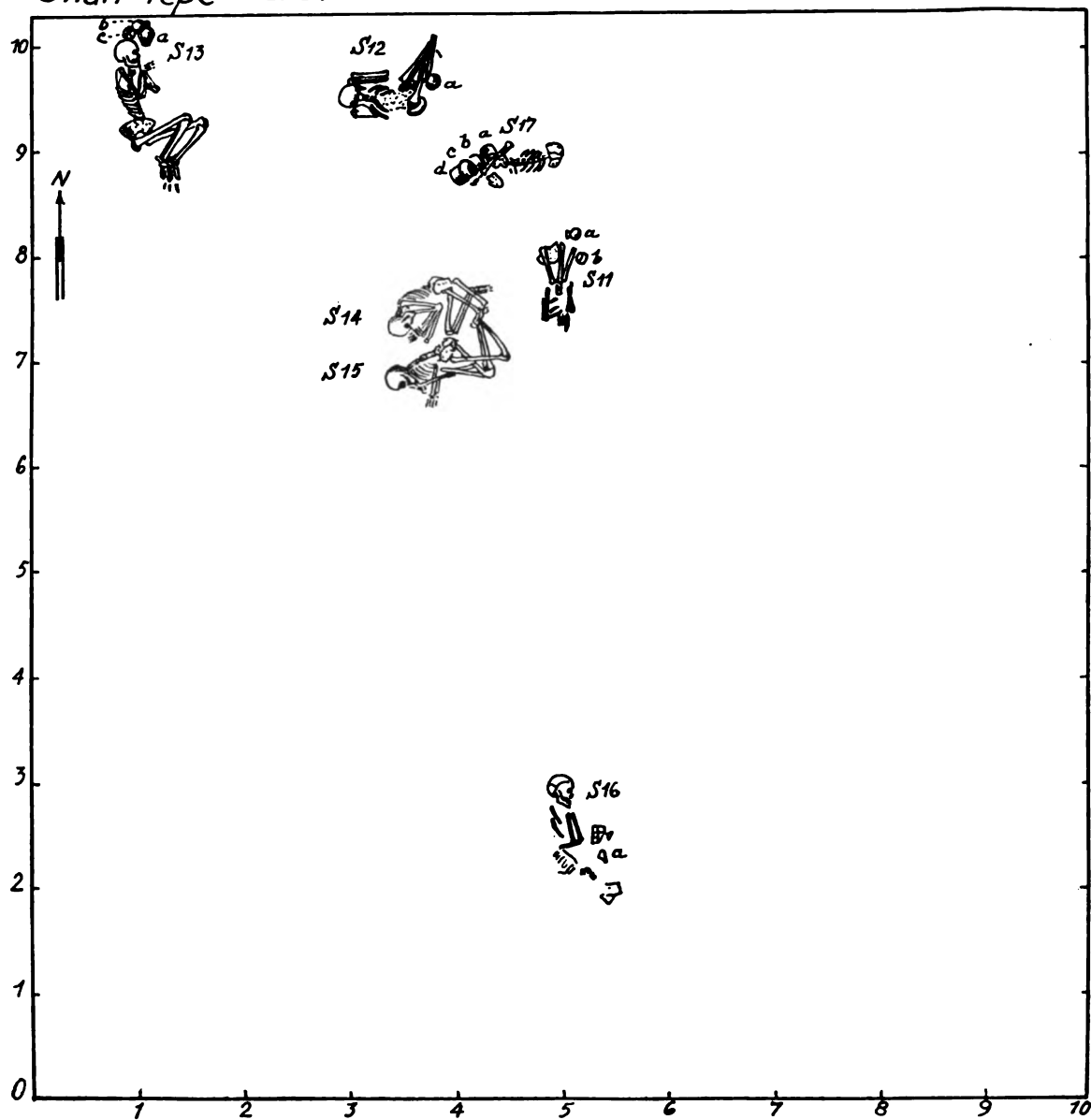


Fig. 56

SHAFT G

Excavation of this shaft was begun on May 6th and concluded on June 21st. The shaft constituted an immediate continuation of shaft F (Pl. V, Fig. 54); and G proved to be a centre for the Mussulman burials. The height varied between +7.66 and +7.92 m.

Stratum III (Fig. 55).

The painted, two-coloured pottery was very little in evidence in this shaft. The *black, grey or dark brown pottery* typical of stratum III, — *bellied jars and low bowls*, — appeared in five graves (*G III S^{5,3,2}*, *G II S^{19,18}*) at levels varying between +0.45 m. and +2.75 m. The latter level thus seems to constitute the boundary towards stratum II, but it may possibly be raised to +2.80 m., thanks to a little black and red painted *animal statuette* that was found at +2.80 m. (*G II*, 10). One of the characteristic graves of the younger II b layer, namely, *G III S¹* had been dug so deep that it came to be placed at the level +2.25 — +2.35 m. This grave contained clay vessels of cylindrical, egg-shaped and biconical form. There is reason to suppose that also the grave *G III S⁴*, without finds, is contemporaneous with the majority of the graves of the layer.

Among the loose finds or pottery may be noted a *jar* (*G III*, 3) of the same kind as those found in the graves; further, the foot of a tall »fruit-stand» (*G III*, 4) and a *tall and very large jar* (*G III*, 1) developed from lower prototypes. The two former pieces were found at +1.50 m., the third at +2.10 m. A coarse *cooking vessel* (*G III*, 6) lay at +1.2 m. to the north-east of *S⁵* and 1/2 m. lower.

Also of interest are a couple of *animal effigies of clay* with the heads and legs knocked off, the one of black (*G III*, 5, +1.30 m.), the other of red earthenware. *II flint flakes* were found in this layer, also about 10 pointed oval *sling-stones* of burnt clay. There were few *bone objects*, and as regards *copper* only some fragmentary *pins* and the remains of an *arm-band*. Half a large *millstone* lay about 3 m. ENE of the skeleton No. 5. A little more than 3 m. farther to the north, at -0.15 m. were the remnants of a fire-place with *red potsherds*. At a higher level, namely, about +1.30 to +1.45 m., in the western part of the shaft, was observed a hard *stamped clay floor*, on which the skeletons *S³* and *S⁴* were found. The floor measurements were approximately 3×3 m. About 1 1/2 m. farther to the east, above *S²*, was noted a 2 to 3 cm. thick layer of *coal*, 10 cms. above the skeleton, and 15 cms. higher up a further *coal layer*. Both floor and coal remains were presumably remnants from dwellings.

Stratum II b (Fig. 56).

Although one of the typical graves of this stratum was found as deep as +2.25 m., the boundary between strata III and II lay higher up, and the real collection of stratum II b graves was situated between such narrow limits as +3.35 m. and +3.95 m. The graves *G II S¹⁶* (+3.35 m.), *G II S¹³* and *S¹⁷* (+3.70 m.) contained the typical black-grey pottery, — *deep bowls or goblets, cylindrical, egg-shaped and biconical clay vessels*, — and the pottery in the graves *G II S¹²* and *S¹¹* (at +3.90 and +3.95 m.) was also related. The double grave *G II S¹⁴* and *S¹⁵* at +3.50—+3.60 m. without finds belongs, of course, also here. The boundaries for stratum II b are thus roughly +2.80 and +4.00 m.

Shah Tepé GIIa

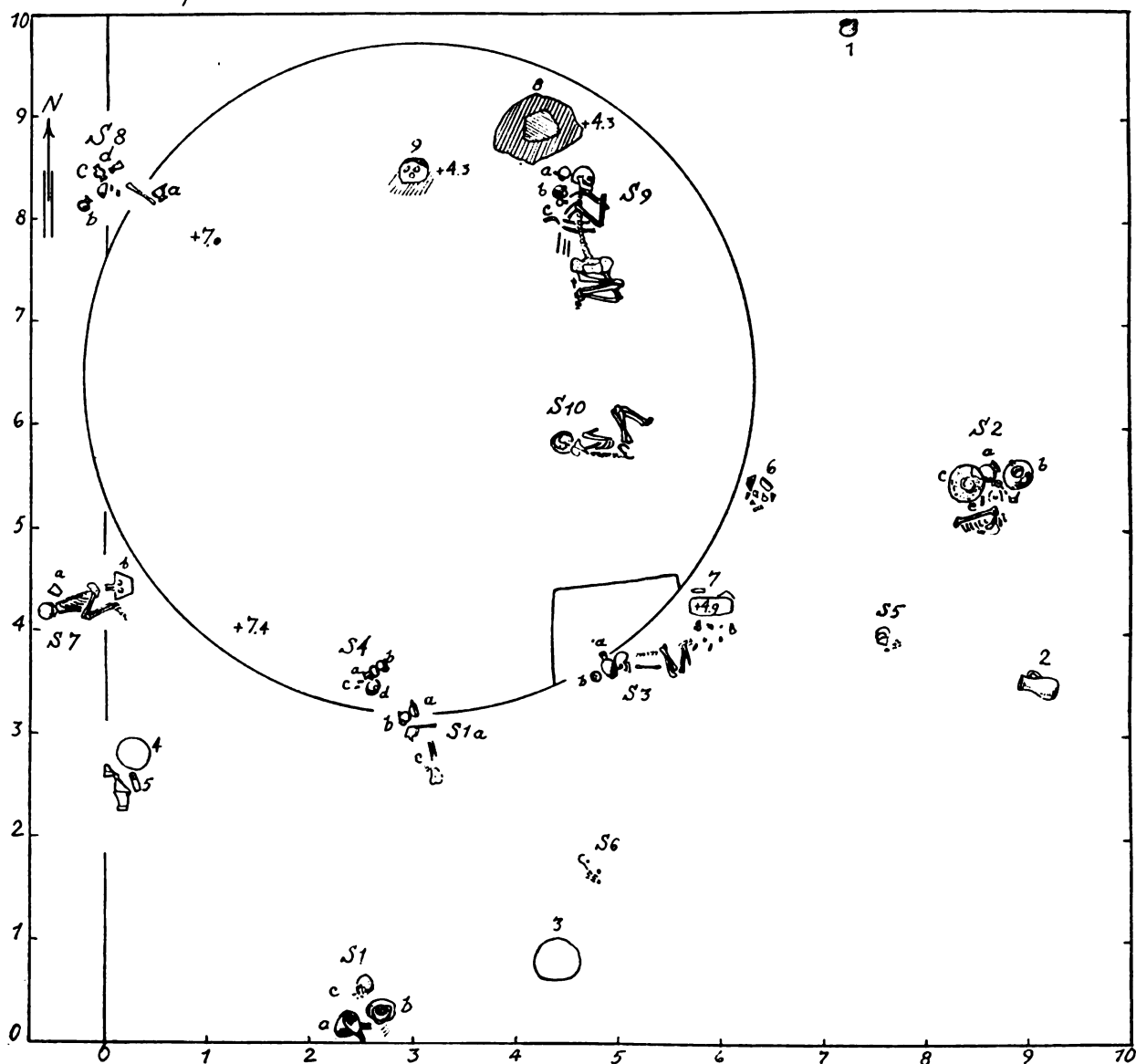


Fig. 57

Stratum II a (Fig. 57).

At a level of +4.50 m. lay a child skeleton (*G II S¹⁰*) without finds, but presumably belonging to this stratum. Not before +4.80 m. did we find a grave (*G II S⁹*) with the typical »tea-pots«, and then followed four more graves with finds (*G II S^{8.3.2}* and 7) at +5.00, +5.90 and +6.00 respectively. Of these, at least the three first are to be ascribed to this stratum (II a²). The same is also the case with the two graves S⁵ and S⁶ (+5.50 and +5.30 m.) without

pottery, but containing *beads* and *copper rings*. A youngest period (II a¹) includes a further 3 graves, namely, G II S¹, S^{1a} and S⁴ at +6.50 and +6.60 m. respectively. Each of these graves contains a *coarse cooking vessel with handle*, and in a couple occur also large *bowls with broad tongue-like spouts*. Variants of clay vessels are rather numerous within this stratum. In a couple of cases the *coarse cooking vessels* with handles have also been found outside the graves (G II, 1 and no. 963) at +6.00 and +6.50 m.; and at +5.50 m. was found an almost *cylindrical clay vessel* with a vertical handle affixed on the edge of the rim (G II, 5). A *kettle of coarse ware* (G II, 3, +5.10 m.) also belongs to stratum II a² (Pl. V, Fig. 58).

Thanks to the closed grave-finds it is possible to give a relative date in connection with a number of other objects, as for example from G II several *goblets*, some *clay lids*, some with handles, some with string-holes; further, a bored *horn of clay*, *clay wheels* and 15 round *sling-stones*. Of great interest is the single occurrence of *gold*, namely, in the form of thin foil around a copper ring that was found in G II S⁴, one of the youngest graves in G II a. *Alabaster* also occurs in the youngest level, in the form of a rose-coloured cup in grave G II S⁷ and a piece belonging to a bowl in G II S². A *spindle whorl* of the same material was also noted. Something about 38 *flint flakes* derive from G II. Further, three *awls*, fragments of *pins*, several small *rings*, all of *copper*. A dozen implements, *points* and *chisels*, were made of *bone*. Of great interest were the partly ornamented *bone pins* from the late grave G II S².

A number of skeletons, especially of children, rested on hardpacked clay, full of lime concretion. This was the case with G II S⁶, where the clay was in part half-burnt, brick-like. In G II S⁷ the packed earth was mixed with particles of coal, and under the pelvis was observed red-burnt earth, under which again there was some coal. In grave G II S⁹ red-brown earth was noted at the knee, and in G II S¹¹ the earth under the skeleton was hard packed and filled with lime concretion. Thus, in this case, the skeletons were found *on*, not *under* observable remains of floor.

Near the middle of the north wall lay a *fire-place* with red-burnt clay at +4.30 m. (G II, 8). A large piece of brick-like, red-burnt clay was discovered a couple of metres to the west of G II S¹⁰, and 1 m. to the south-west of the above-mentioned fire-place was found a large *stone* (+4.30 m.) resting on red-burnt clay and on which were placed 3 smaller *stones* (9). A large *flat stone* (no. 305, G II, 7) was found almost in the middle of the layer G II at a height of +4.90 m., and covered a number of fragments of clay vessels. Finally, mention may be made of a small *depot of broken clay vessels* (G II, 6) at a height of +5.00 m. The boundaries for stratum II a, according to the above description, are +4.00 m. for the lower limit and for the upper one, towards stratum I, +6.60 m.

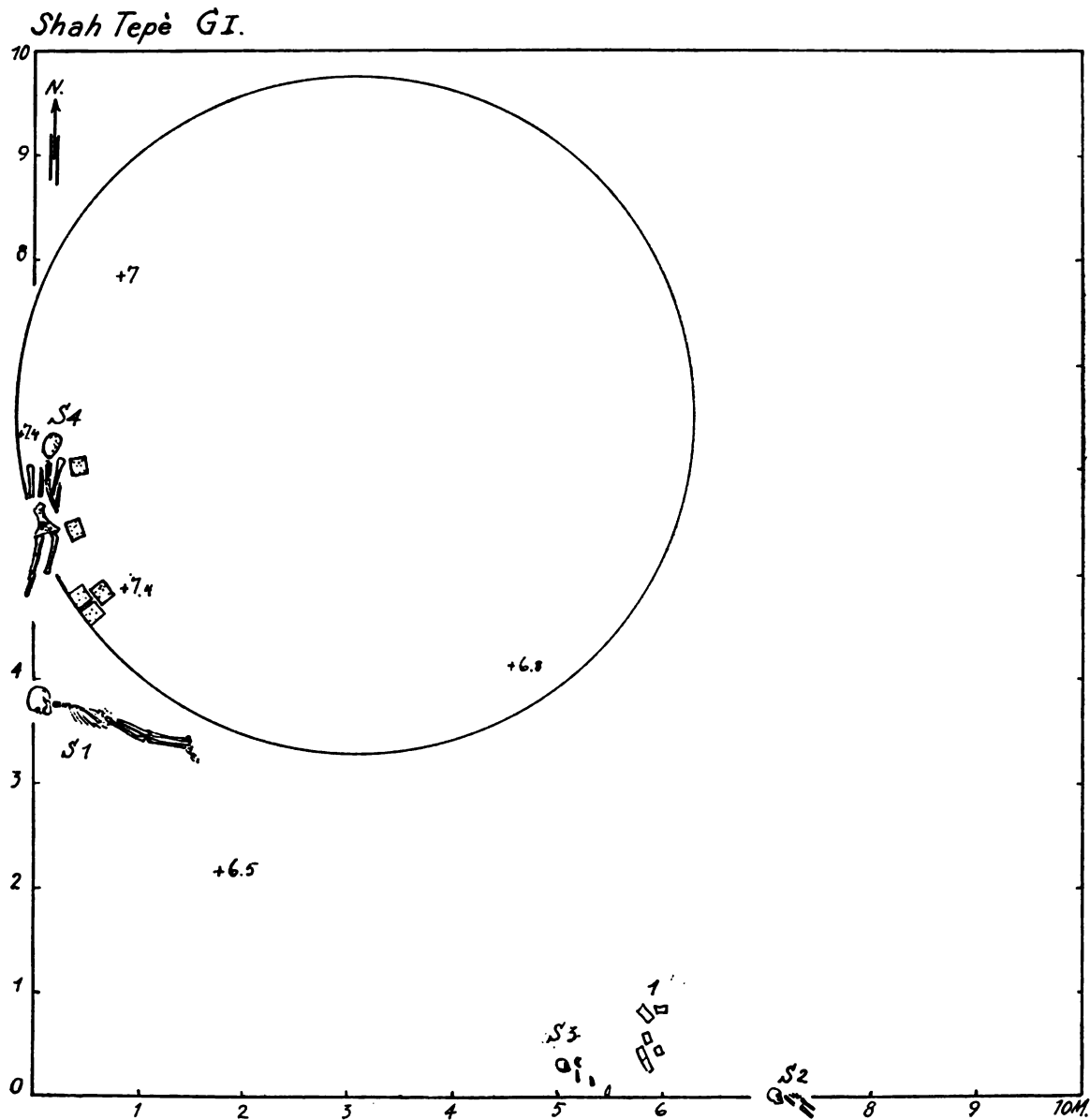


Fig. 59

Stratum I (Fig. 59).

The central part in G I consists of the remains of a *brick tower* (Figs. 60, Pl. V, 6I, a, b, c). This was circular, with a diameter of 6.40 m. and walls of 1.90 m. in thickness. The round, inner tower room thus measured only 2.60 m. in cross-section. The building material consisted of thin square bricks laid in layers, separated from one another by clay with some admixture of lime, not by proper mortar. In one place 9 layers were still in position, but for the most part only 5. The highest part of the tower-wall reached to +7.55 m.; the base was at

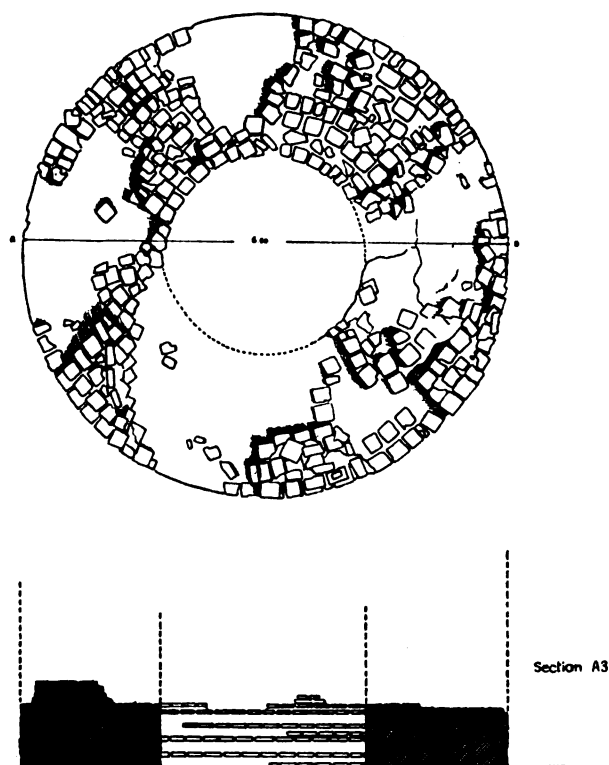


Fig. 60

about +6.50 m. The bricks were of varying size. The largest, reddish in colour, measured $0.34 \times 0.34 \times 0.07$ m.; but the majority, of which some were red, others yellow, measured $0.225 \times 0.225 \times 0.048$ m. Some of the bricks, however, had sides measuring only 0.215 m.

It is not possible to determine the original height of the tower. We may suppose it to have been the tomb of some person of spiritual or wordly importance, a tower of the same kind as that still in existence in Gonbad-i Qabus. This latter is dated by an inscription to the moon-year 397 e. H. and the sun-year 375 according to Jazdegerd's era, that is to say, 1006—1007 A. D.

There is now, however, no grave in the tower in Shah Tepé. On the other hand, in Mussulman time, perhaps after the tower had already been damaged, a grave has been built into its outer part, namely, in the western part of the wall. A woman's skeleton (*G I S⁴*) with *beads*, *iron objects* and *bronze earrings* lay here (Pl. VI, Fig. 62). The skeleton was disposed in the direction NNE—SSW, some of the upper part being in a niche in the wall (at +7.40 to +7.50 m.). No bricks lay directly over the skeleton, but behind the cranium and towards the wall there were some, as well as underneath the skeleton. Three other Mussulman skeletons (*G I S¹⁻³*) were found in the same layer oriented in the direction

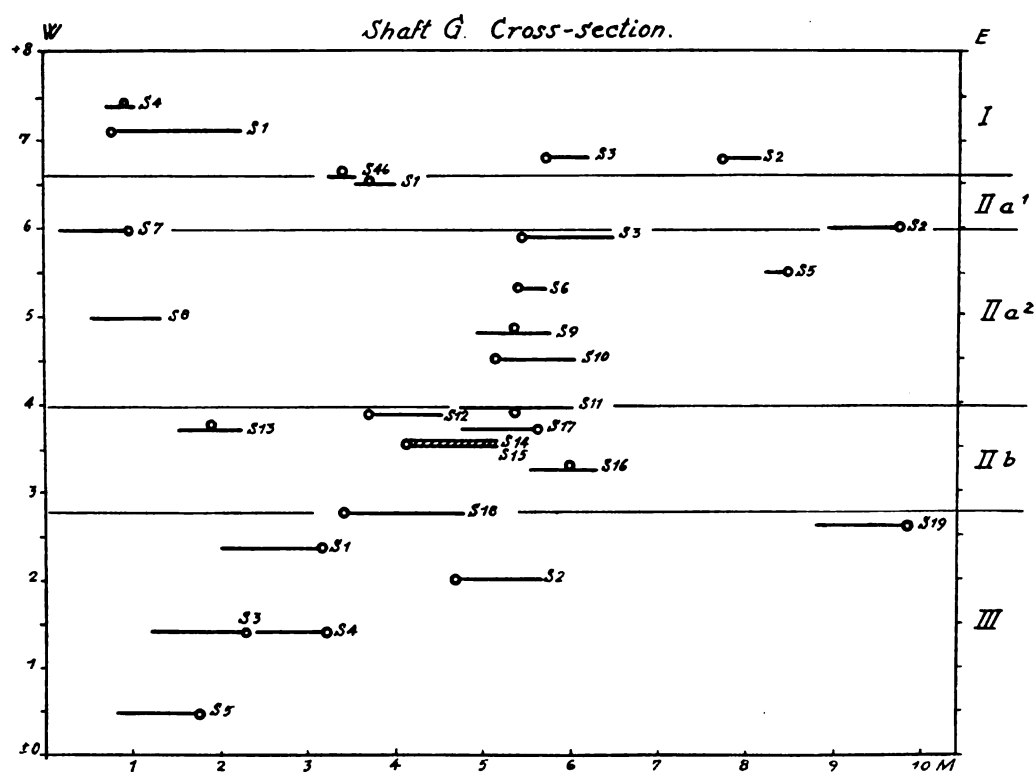


Fig. 64

WNW—ENE at the levels $+6.80$ and $+7.10$ m., as well as a couple of indeterminate *Arabic silver coins* (No. 743).

The above mentioned tower in all probability constituted an »Imam-zadé», the tomb of a saint, around which the remaining Mussulman grave-yard was grouped (Pl. VI, Fig. 63). Such imam-zadés and burial places are to be found in several places in the Asterabad-Gorgan region.

Summary.

Four, if not five different strata could be distinguished in shaft G. The earliest, G III, extended from $+0.45$ m. to approximately $+2.80$ m.; the next, G II b, from $+2.80$ to $+4.00$ m.; then G II a² from $+4.00$ to $+6.00$ m.; G II a¹ from $+6.00$ to $+6.60$ m.; and finally G I from $+6.60$ to the surface, with the highest situated grave at $+7.50$ m. (Fig. 64).

SHAFT H

The examination was begun on May 22nd and continued till June 24th; but there was not time to conclude it with a complete excavation of the shaft. From the surface $+7.90$ m. we only got down to $+5.00$ m., that is, to the upper part of stratum II a.

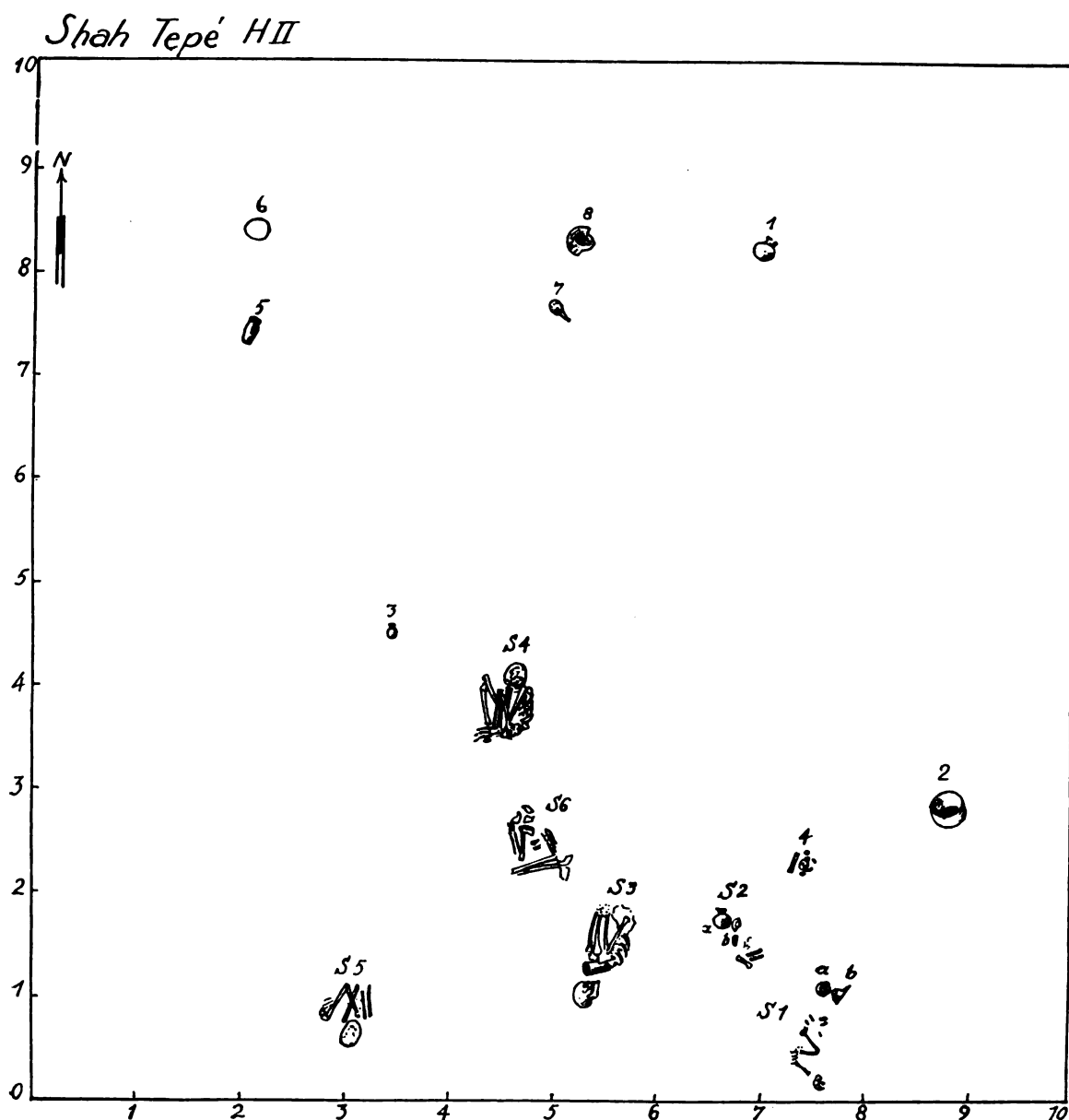


Fig. 65

Stratum II a (Fig. 65).

Six skeletons, *H II S*^{1—6}, in a contracted position were dug out here at height of +5.70, +5.65, +5.70, +5.40, +5.30, +5.30 m. respectively. Of these, the first three contained finds of clay vessels, most nearly characteristic of stratum II a¹. Grave *H II S*¹ contained a deep bowl with a broad, trough-like spout, as well as a cooking vessel with handle. In grave *H II S*² were found a round-bottomed carafe and a cylindrical faience bead. In *H II S*³, finally, there was a narrow cylindrical clay vessel.

Shah Tepé H1.

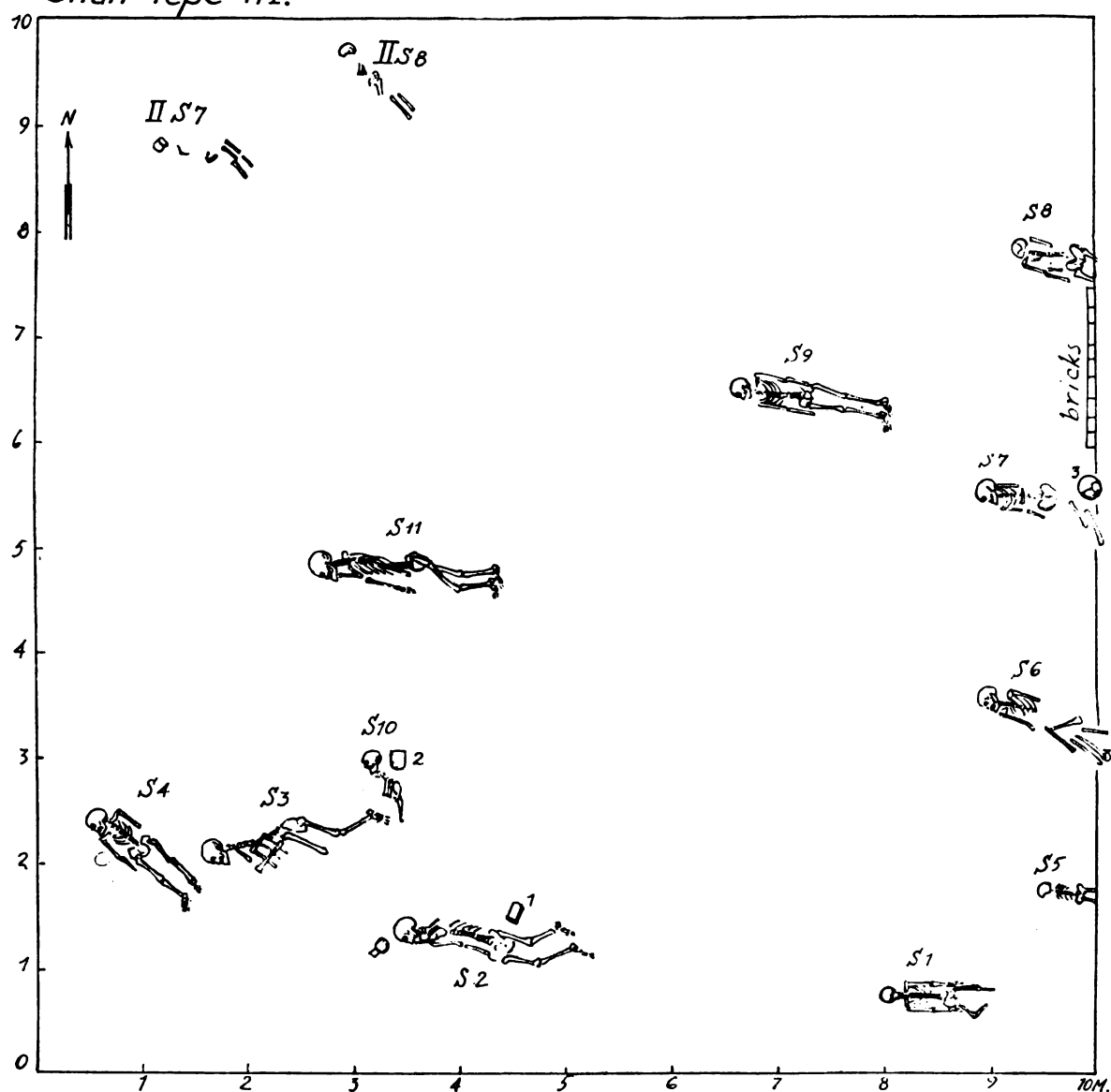


Fig. 68

It is probable that the boundary between H II a¹ and a² is about +5.10 m., for at this level were found an earlier *handle* and a *spout*, both of *earthenware*. A *clay rattle* (H II, 7) and a *concave clay lid* with handle (H II, 8) were found at +5.00 m., thus more or less at the boundary. Above this were found some more *clay vessels*, H II, 5, 3, 1 at +5.40, +6.10 and +6.30 m. respectively. Of these, it is possible that H II, 1 is rather earlier than the others. Single *black potsherds* lay about here and there, and in H II, 2, 1 m. from the east wall, was a large

brown *cooking utensil*, a sort of kettle (+5.70 m., Pl. VI, Fig. 66). A *similar one* stood also in H II, 6 at the level +5.40 m. (Pl. VI, Fig. 67). In H II, 4 were many sherds.

The boundary towards stratum I is here about +5.90 to +6.00 m., for the Mussulman graves were in some cases found as low as this.

Stratum I (Fig. 68).

In all, 13 Mussulman graves were discovered. The skeletons in the graves were stretched out full length and pointing west or northwest. The skeleton graves H I S¹² and S¹³ lay at +5.90 and +6.00 m. respectively; but the others were found at a depth varying between +6.90 and +7.60 m. To the east of and behind the head of skeleton 10 was found a *large flat stone*, and before the forehead of skeleton 2 a little heart-shaped *clay lamp* (Pl. VI, Fig. 69). Behind the thigh-bones of the lastmentioned skeleton lay a *brick*. An *iron plate* (H I, 3; Pl. VI, Fig. 70) was discovered to the east, at the boundary to shaft G and at the level +7.30 m. From here a row of *bricks* extended more than 2 metres in a northerly direction at +7.50 m. (Pl. VI, Fig. 71).

SHAFT B

This shaft reached in the west a height of about +7.40 m. It was situated just at the eastern edge of the plateau and comprised also a part of the eastern slope, down to about +5.70 m. (Pl. VII, Fig. 72). Excavation was begun on April 12th and concluded on June 1st.

Stratum III (Fig. 73).

The earliest graves lay at the ± 0 level, but traces of the oldest settlement appeared already at a depth of -0.60 m. in the form of large *painted clay vessels* in red and black, or only with red slip (B III, 17). Nearer to the south wall was observed also a *fire-place* with red-burnt earth, under and outside of which was seen a charred layer (B III, 19, -0.40 to -0.60 m.).

Especially numerous were the remnants of fire-places at a couple of higher levels, concentrated to the south-western quarter of the shaft. Near the middle at $+0.15$ m., was found a layer, measuring about 1.5×1.00 m., of *red-burnt earth with admixture of coal* (B III, 20; Pl. VII, Fig. 74). To the south of this lay a large, *similar region* (B III, 14) having an area of about 2.00×2.00 m. at -0.25 m. Here was sunk a little round cavity, and near this was a *large flat stone* (mill-stone?) (B III, 9) at $+0.20$ m., as well as collections of red-burnt clay, like sto-

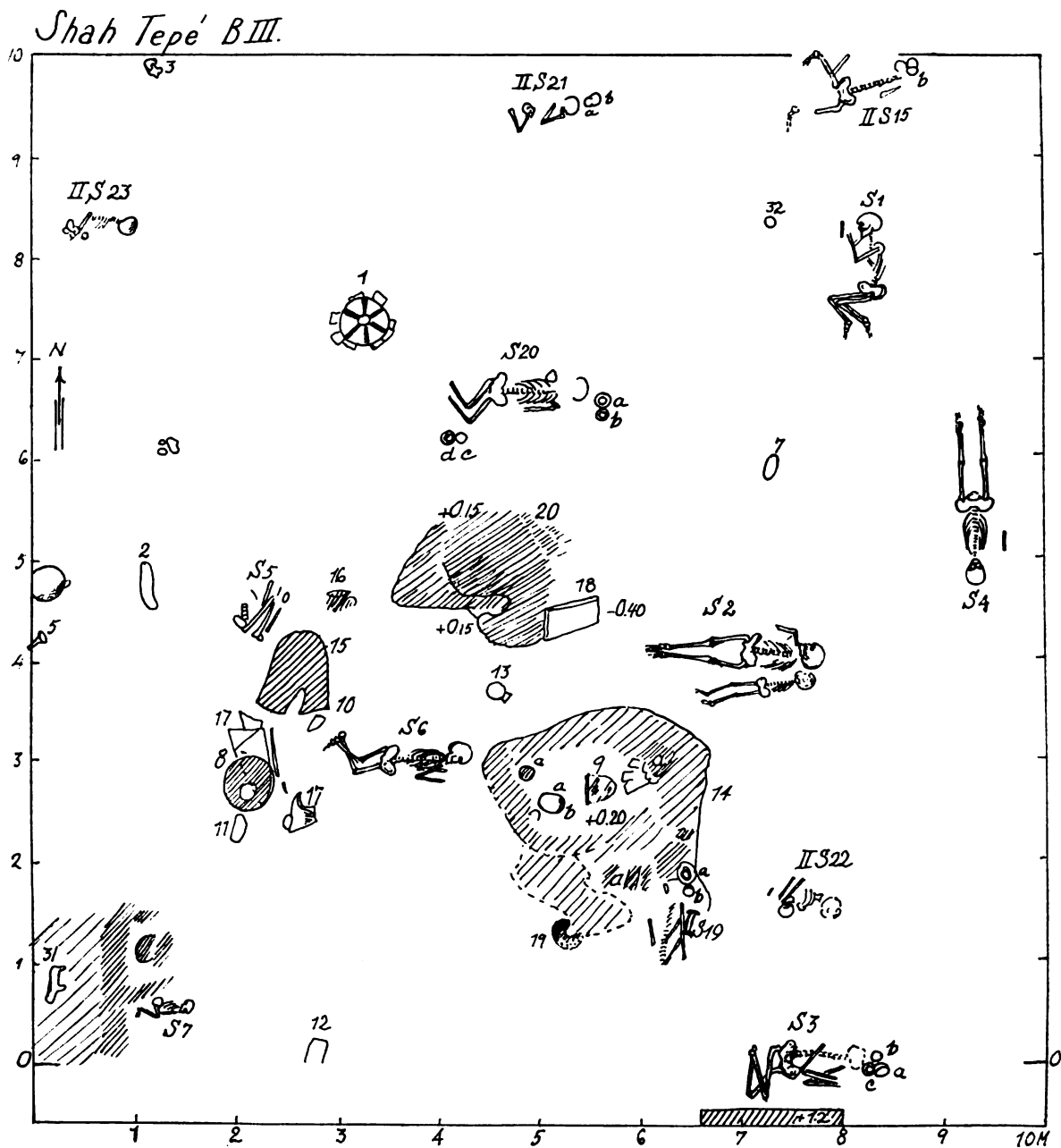


Fig. 73

nes. A couple of metres farther to the west were found two more round »fire-places» with a redburnt clay surface and a hollow in the middle measuring approximately 15 cms. in depth and 20×20 cms. in section (B III, 8 and B III, 15 at +0.90 and -0.40 m. respectively). Also in the south-west corner was found a similar »fire-place» with red-burnt clay and admixture of coal and lime concretion (approx. +1.90 m.).

It is possible that a couple of hard packed, oblong «cushions» of clay (B III, 11 and 12 at +0.20 and -0.10 m. respectively) originally served as seats.

As regards the *painted pottery* characteristic of stratum III, this was found, besides at -0.60 m., at different levels up to +3.10 m., indeed, even higher. Fragments were found here and there in the vicinity of the fire-place B III, 20 (approx. +0). A large black and red painted vessel lay in B III, 1 at +1.80 m. (Pl. VII, Fig. 75), fragments of similar pottery in B III, 2 (+1.50 m.), a black and red painted animal statuette (B II, 29) emerged at a level of +2.90 m., and fragments of painted earthenware were observed behind the thigh-bones in the grave B II S¹² at +3.10 m., indeed, such a fragment appeared in the grave B II S⁷ at +4.60 m. Altogether, about 60 painted potsherds were found in B II. The boundary between the strata II and III must, however, be drawn in accordance with the characteristic finds of pottery in the graves. If we then consider the lower situated graves, one finds at the bottom at +0 m. and +0.10 m. a couple of graves without finds (B III S⁸ and S⁵), and not until 1 metre higher up do we come across a grave (B III S³) at +1.20 m. containing *jars* and *bowls* of the pottery typical of this level. The graves B III S⁴, S², S¹, S⁷ at +1.40, +1.40 +1.80 and +2.90 m. respectively were without finds (Pl. VII, Fig. 76). One notices in this connection that the grave B III S² is a double grave containing mother and child, while the approximately 1.90 metre-long skeleton in B III S⁴ lies stretched out on the back and lacks any trace of arms and hands.

The characteristic *jars* and *hemispheric bowls* appear then in the skeleton graves B II S²⁰, S²¹, S¹⁹ and S¹⁵ at +2.50, +2.60, +2.70 and +2.80 m. respectively. I set these last-mentioned figures as the boundary between stratum III and stratum II b, despite the occurrence of painted pottery in the form of loose fragments at a higher level. Of course, the contemporary settlement must have reached higher than the graves. On the other hand, graves of younger character, characteristic of stratum II b, have sometimes been dug so as to rest *under* the boundary-line given. So, for example, B II S¹⁸, S¹⁶ and S¹⁷ were found at +2.50, +2.70 and +2.80 m. respectively. They contain *egg-shaped*, *cylindrical* and *biconical* vessels, *globular jars* with and without string-hole projections and *deep bowls*.

To stratum B III, presumably, belong also the child grave B II S²² (+2.60 m.) without finds and a *grave without number*, lying in the north wall, to the north of B II S¹⁵.

A number of black or grey clay vessels were also discovered outside the graves. Mention may also be made here of a *round-bellied carafe* with a rather wide neck (B III, 13 at -0.40 m.) and a couple of large *black storage jars* (B III, 6 at +1.20 m. and B III, 24 at +2.90 m.; the latter should perhaps be ascribed to stratum B II). In the west wall was found, at +1.30 m., a hollow *foot belonging to a black clay vessel*, and in the vicinity, but at +2.70 m., stood a large redbrown *clay pot* of coarse ware with a short spout of 25 cms. in height and the same width as regards

the mouth. The bottom of the pot stood in *grey clay*. About 4 to 5 cms. above the bottom a 2—5 cm. thick layer of *charcoal* surrounded the pot. Above this layer was a 20—25 cm. thick *layer of red-burnt clay*. Into this latter, from the north, a 5 cm. thick wedge of *grey-brown clay* was thrust, bounded above by a *coal border* 1 centimetre in thickness. In this latter were found numerous *black potsherds*. The whole of this »fire-place« measured approximately 1.10 m. in diameter.

Mention may also be made here of the flat *millstones* found at the levels +0.20 and +0.60 m. (B III, 9 and 10 and B III 7).

A couple of broken *pins*, the *fragment of an arm-band* (in B II S¹⁵) and some other *fragments* were all made of *copper*. No beads were found in this layer. 7 specimens of *bone implements* were discovered. Nine pointed egg-shaped *sling-bullets* of burnt clay lay in B III, while ten rather similar ones, some not quite so pointed, were found in B II. Twenty-six *flint flakes* were dug up here, but in B II the number of these amounted to 42. In addition, in B III were found a couple of round *flint balls* (chipping stones), one of which was in grave B III S⁴.

Stratum II b (Fig. 78).

As already mentioned, I will fix the lower boundary of this stratum at +2.80 m. It is nevertheless the fact, that the richest and most typical grave-pottery occurs in the previously discussed graves B II S¹⁸, S¹⁶ and S¹⁷, which had been dug in the belt +2.50 to +2.80 m. But also the graves B II S¹² and S⁹, each with typical *clay vessels* (*biconical* and *egg-shaped*), may be said to belong here. Their levels are +3.10 and +3.90 m. respectively. B II S¹² lies immediately below grave B II S⁶.

At +4.30 and +4.40 m. lie the last-mentioned grave (B II S⁶) and grave S⁵, the pottery of which entitles them also to be ranged in this stratum. I should like here to set the boundary towards stratum II a, although an older type of vessel, namely, the deep bowls, continues to occur also in rather later graves. The skeleton-graves B II S¹⁴, S¹³, S¹¹ and S¹⁰ were without finds.

Outside the graves were discovered a *biconical pot with a handle* (B II, 28 at +3.30 m.) and a little black *round-bottomed bottle* (B II, 23), which despite its position at +3.90 m. is strictly speaking characteristic of stratum II a. The large *black storage jar* in B II, 24 (+2.90 m.) has previously been mentioned.

It is unusual for *alabaster vases* to occur as early as was the case with B II, 26, where such a vase of cylindrical form was discovered at +3.00 m.

Altogether, 5 *animal statuettes of clay* were found in B II, among which number, one, painted red and black (B II, 29 at +2.90 m.), has already been mentioned. Another of the number, B II, 30, was black-coloured (+ 3.10 m.). A third ani-

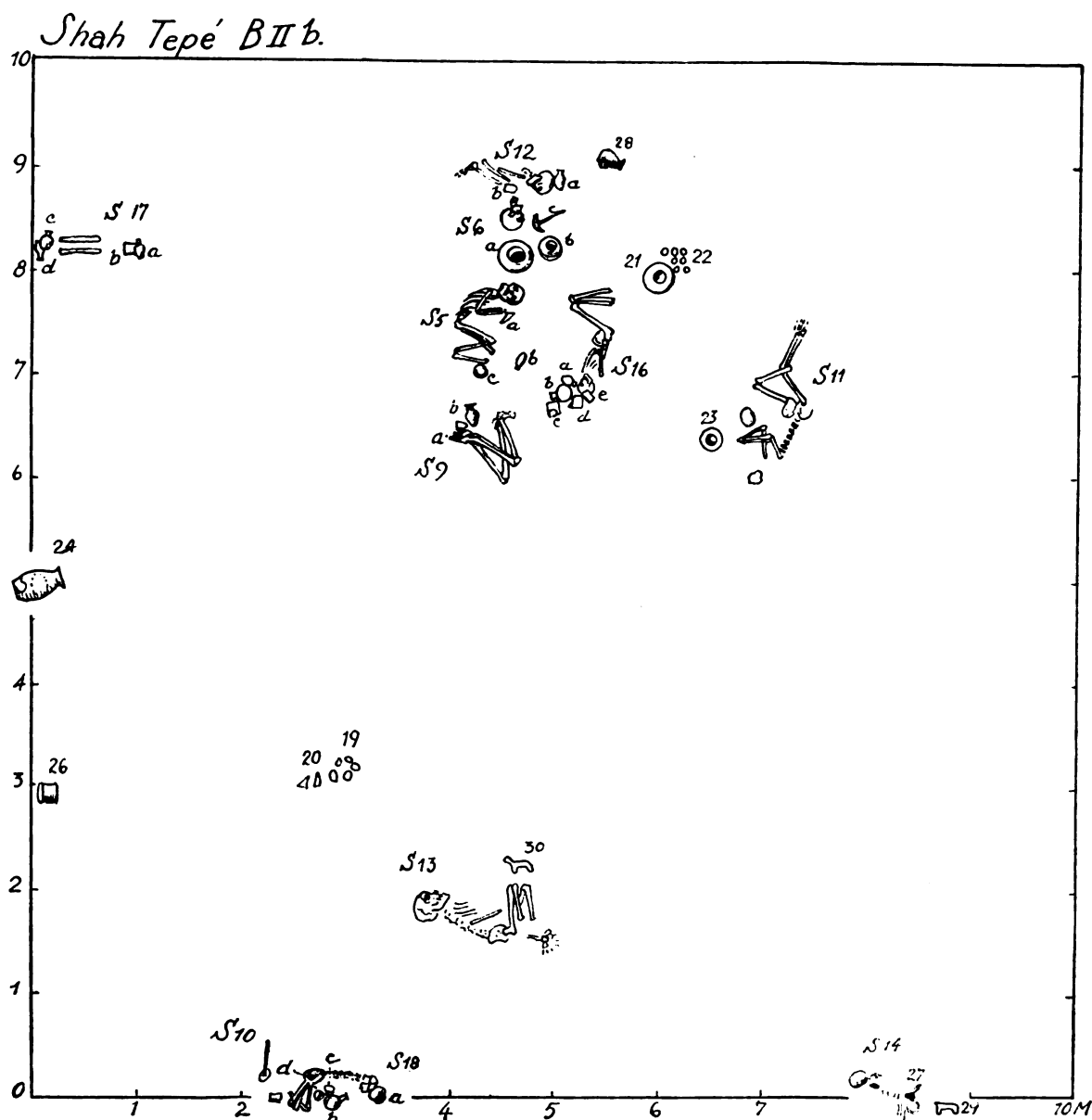


Fig. 78

mal figure (B II, 31), found in the south-west corner, was discovered in the transitional layer between III and II b.; nos. 812 and 787 were red, no. 788 gray.

At +2.90 m., near the west wall, a stone door-hinge(?) (No. 708, B II, 25) was dug up. The large storage jar B II, 24 was found resting upon this. A round stone mortar or stone socket (B II, 21) lay near an arrangement of stones (B II, 22) $1\frac{1}{2}$ m. from the middle of the north wall and at +3.90 m.

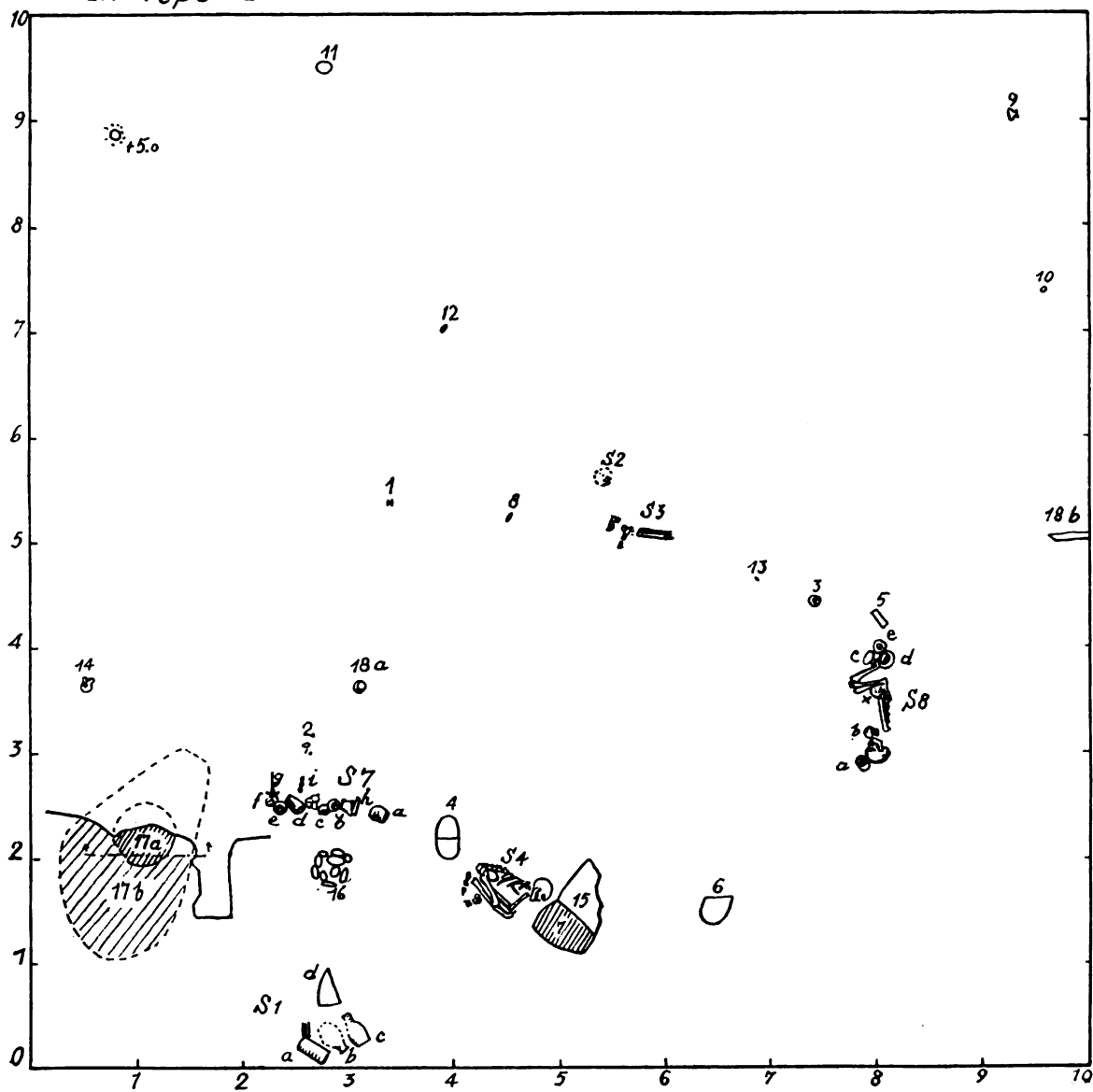


Fig. 79

Stratum II a (Fig. 79).

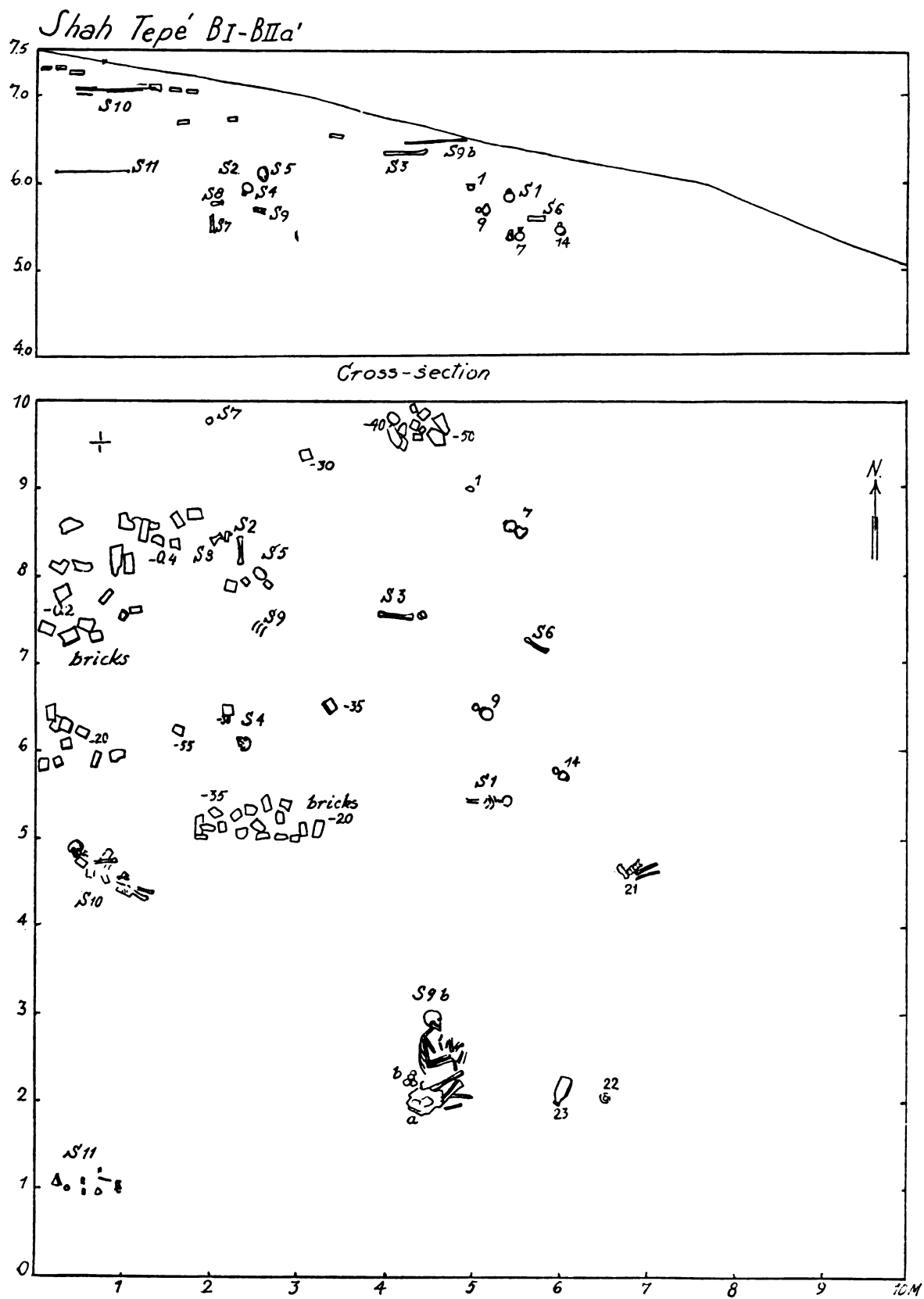
From the level +4.40 m. this stratum reaches as high as +5.80 m. if we are to go only by the finds in the graves; but to +6.20 m. if we are to be guided also by the loose pottery. The graves *B II S⁸ and S⁷*, characterised by round-bottomed *spherical carafes* and *tea-pots*, lay at +4.50 and +4.60 m. respectively. They contained, in addition, *deep bowls* which also occur in the older stratum II b (but of thin ware,) and also (in S⁷) a little *alabaster bottle*. The coarse

cylindrical foot from an *alabaster vessel*, together with a *tall oval-curved vase* and *potsherds*, comprised the contents in the skeleton grave *B II S¹* situated at +5.80 m. The graves *B II S², S³, S⁴*, at +5.80, +5.50 and +4.95 m. respectively, were without finds, but to the east of the cranium in the lastmentioned grave was seen a *fire-place* (*B II, 7*) which reached up to +5.10 m (Pl. VII, Fig. 80). Immediately to the north of the fire-place began a *layer of hard clay* (*B II, 15*). Farther to the west another *hard tramped clay (pisé)-layer*, 1½ m. in width, was observed. In its northern part could be seen remains of a round *fire-place* with red-burnt earth (*B, 17* at +5.00 m.). A round *arrangement of stones* (*B II, 16*) lay at +4.90 m. between the fire-places or hearths mentioned. We have probably here to do with floors and hearths in older dwellings.

It is probable that every household in Shah Tepé had its own *millstone* for the preparation of flour. Numerous such stones were found in stratum *B II*. A couple are introduced in the plan in *B II, 4* and *6* (+ 5.60 and +5.00 m. respectively), but 4 others were dug up here. Several white and black *stones* as well as spherical *chipping-stones* were also found here. The *flint flakes* have already been mentioned, as have also the *sling-bullets* of clay. The foot of an *alabaster vessel* lay in *B II, 5* at +5.00 m. We have thus three alabaster finds in *B II a* and one, perhaps two (No. 1376), in *B II b*. Five *implements of bone* were met with. Metal finds were not very numerous: in *B II, 2* lay fragments of a *copper pin* at +5.30 m.; a *copper ring* was found in *B II, 27* (+3.00 m.); and five more loose *small finds of copper* were taken up. Of greater value were the fine *copper pin* or «wand» with *crescent-shaped head* in grave *B II S⁶* and the *pin with triangular head* in *B II S⁷*. In the latter grave were found also *beads*, which seem to be of great importance in determining the absolute chronology.

Outside the graves were discovered various clay vessels, both damaged and intact. The little «tea-pot» with spout that was found in *B II, 14* at +4.90 m. might almost have been expected. Four small, almost *spherical clay vessels* with round bottoms, namely, *B II, 3* and *B I, 14, 1* and *22*, were dug up at levels of +5.10, +5.40, +5.97 and +.620 m. respectively. A damaged *toy ocarina* (clay «cuckoo») was found in *B II, 10* at +5.50 m. A couple of finds that must be regarded as typical of the latest prehistoric time (*II a*) were a *tall narrow jar* (*B I, 23*), related to the snake vessel in *E II, 20* and found at +6.20 m., and a *wide bowl* with short open *spout*, lying together with a *cooking utensil* provided with handle at +5.34 m. (*B I, 7 a* and *b* (Pl. VII, Fig. 81). From *B I* we have, further, some small *clay vessels*, which must be regarded as prehistoric, as is also the case with the grave *B I S⁹* (+6.45 m.), the skeleton of which lay in a crouching position in north-south direction. The burial vessels in this grave were partly of badly burnt, thick reddish earthenware (*cooking utensils*) and partly black-grey earthenware.

This grave lay at a level of +6.45 m. in the north-southerly midline of the shaft.



We are probably justified in stating the upper boundary of stratum II a as approximately +6.50 m., and that the majority of the skeleton remains that have been noted on the plan as belonging to horizon I are actually prehistoric.

Stratum II a¹ and I (Fig. 82).

Not more than *two* of the II + I skeletons that have been designated *B I S¹⁻¹¹* can really be regarded as Mussulman. These are the two found in *B I S¹⁰* and *B I S¹¹* at +7.10 and +6.10 m. respectively, at the west wall of the shaft. They seem both to have been stretched out full length with the heads pointing north-west and west. To the east of the medial line, north-south, no Mussulman finds at all were discovered. The Mussulman indications in the western half of the shaft were the collections of *bricks*. In the north-western part of the shaft lay a collection of burnt clay bricks, 15 to 20 cms. under the surface of the earth, probably remains of an older floor or perhaps of ruined Mussulman graves. Also at the southern edge of the shaft was found such a collection of bricks down to -35 cms. under the surface of the earth; and single square bricks lay about here and there down to -55 cms. under the earth's surface. For the rest, only one Mussulman find deserves mention, namely, the bottom of a glass vessel (*B II, 10*), that had sunk down as far as +4.80 m., but close to the east shaft wall, the upper earthy part of which scarcely measures 90 cms. in thickness. The skeletal remains *B I S¹⁻⁹* were certainly all prehistoric.

Summary.

In this shaft the earliest traces of settlement were found at the level -0.60 m.; and the boundary between stratum B III and B II b may be set at approximately +2.80 m., that between B II b and B II a at +4.40 m., and that between B II a and B I at approximately +6.50 m. There are indications in favour of a boundary at about +5.40 m. between a cultural layer B II a² and another, the youngest, B II a¹ (Fig. 83, cross-section).

SHAFT D

The investigation of this shaft went on from April 21st to May 3rd. The shaft lies in the rather steep eastern slope of the tepé with a rise of 4 m. in 10 m. in east-westerly direction (Pl. VII, Fig. 72). The highest point lies to the south-west at about +5.50 m., the lowest to the north-east, where the slope sheers down to the meadow. The eastern half is also without finds, except farthest to the south, and deep down, where the extreme outside find was made 3¾ m. from the eastern edge.

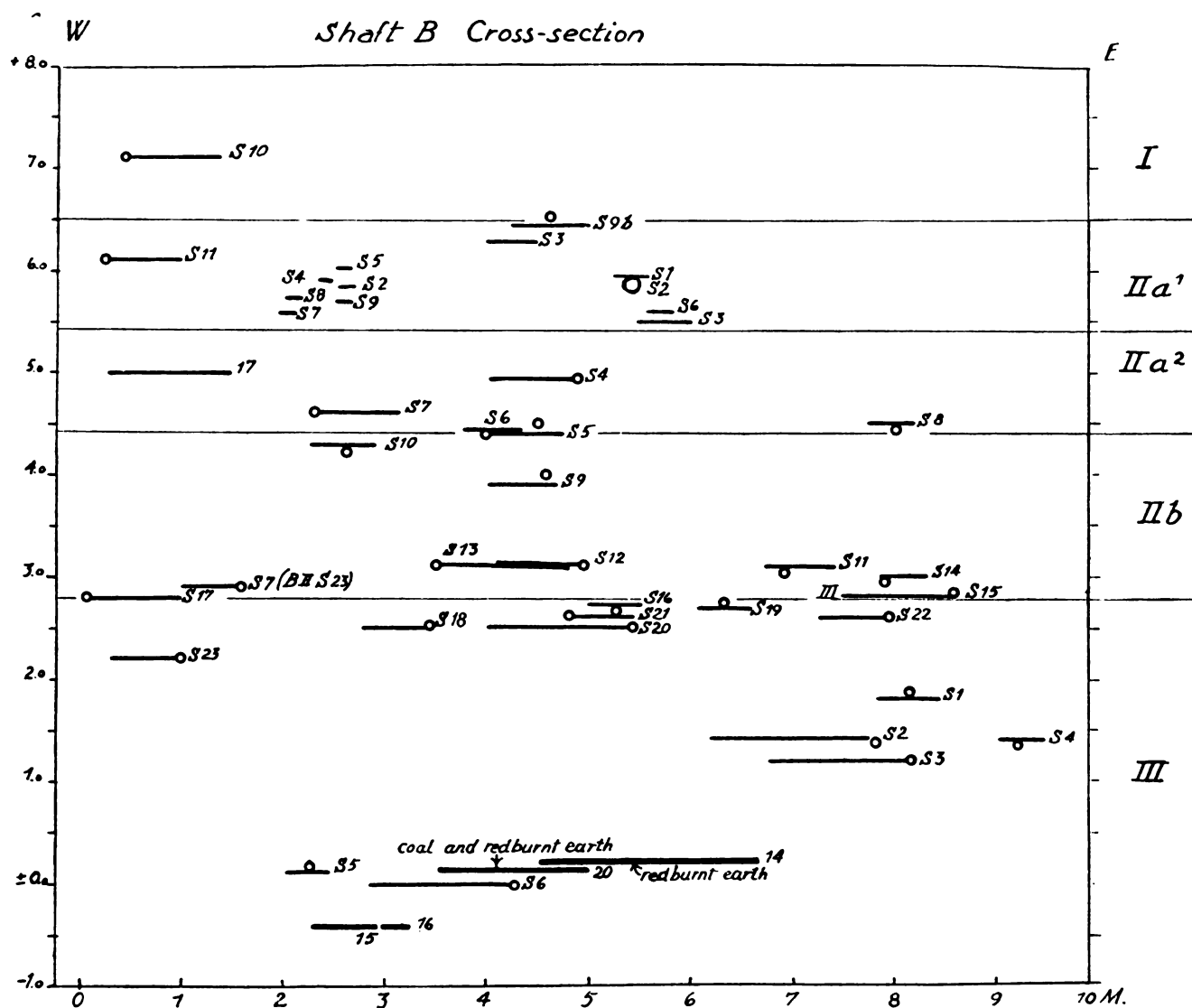


Fig. 83

Stratum III. (Fig. 84).

Excavation showed that the finds in the lowest layer occurred at the most easterly points, and then retired, as it were, successively to the west and north-west the higher one went. Over the most easterly finds in horizon III the 3.5 m.-curve may approximately be drawn; over the finds in stratum II, the 4 m.-curve, and over those of stratum I, finally, the 5 m.-curve.

The deepest situated finds in stratum III were found at +1.50 m. and were covered with a layer of earth 1.5 to 2.00 m. in thickness, indeed, over to the west more than 3 m. thick. These deep finds, however, consist almost exclusively of human bones and bones of animals, and yellow burnt bricks. It would seem, if one bears in mind that the finds in the nearby shaft B reach a depth of -0.60 m.,

The figure is a scatter plot representing the spatial distribution of astronomical objects. The horizontal axis is labeled with values from 0 to 10, likely representing Right Ascension in hours. The vertical axis is also labeled with values from 0 to 10, likely representing Declination in degrees. The plot contains numerous small symbols, each associated with a label. Many labels begin with 'II' followed by a number (e.g., II 15, II 13, II S2, II 18, II 7, II 6, II 8, II 16, II 20, II 10, II 5, II S1, II 11, II 17, II 14, II 12). Other labels include 'S' followed by a number (e.g., S 1, S 3, S 2), and some have additional letters like 'a' or 'b' (e.g., II 16^a, II 16^b). There are also standalone numbers (e.g., 10, 9, 8, 7, 6, 5, 4, 3, 2, 1). The objects are distributed across the field, with notable concentrations in the upper-left quadrant (RA 0-2, Dec 7-9), the upper-right quadrant (RA 4-6, Dec 6-9), and the lower-left quadrant (RA 0-3, Dec 2-4). A few objects are located at higher RA values, such as around RA 6-7.

that a *protective wall* had originally been thrown up around the little community in Shah Tepé, and that a part of this was met with in shaft D.

88

D III and D II is probably to be set at +2.70 m., although on account of the lack of pottery finds in the graves a lot of loose finds have been erroneously marked on the plan and in the catalogue as belonging to D II. A single painted potsherd found at +3.30 m. (D I, 22) had probably been thrown up on some later occasion.

All the 6 graves with skeletons should be ascribed to stratum D III, although only 3 have been designated *D III S¹⁻³* (Pl. VIII, Fig. 85), and the three others *D II S¹⁻³*. Of the former, D III S³ lay at +1.60 m., D III S² at +1.80 m., and D III S¹ at +2.30 m. D III S² contained 4 comparatively early *clay vessels*, one *painted red and black*, a *jar* and a *bowl* of rather unusual shape, and finally, a «*footed*» *bowl* or «*fruit-stand*» with double «*cuppa*». D III S¹ yielded, besides a fragmentary *copper pin*, a 5.9 cm. high *clay bowl*, related to the hemispherical bowls characteristic of stratum III but also to the «*deep bowls*». The graves D II S 1-3 (at +2.70 m. and +2.60 m. respectively) contained no finds.

Among the loose finds may be remarked a *clay rattle* (D III, 4, at +1.80 m.), an *animal statuette* of black clay (D III, 5 at +1.80 m.) and half an animal figure in clay (no. 574). At least 8 *flint flakes* were found under +2.70 m. — the boundary between D III and D II. A single *flint flake* lay at +3.30 m. in D I, 20. Three biconical *sling-stones* of clay were found from +2.40 m. and below this level. Four *points of bone implements* in D II and 2 in D III seem all to lie at or under +2.70. Three *copper fragments* were found in D III. A small *crucible of clay* also occurred in the layer (no. 511).

Worthy of note was the large find in D III, 9 at +1.50 m. of about 10 *tortoises*, one of which was found to contain eggs, as well as the cranium and other bones of *short-horned cattle* and *bones of a fox* (Fig. 86). At the edge of this collection and half a metre deeper was discovered a fragment of a large *cooking utensil*.

A number of yellow burnt and red *bricks*, which lay partly under and partly in a semi-circle round the collection, as also other bricks to the north of it (+1.50 m.) and one single one to the south (D III, 8) are probably to be regarded as having been placed there later; one got the impression of a floor or a fire-place of brick. Various circumstances, such as the character of the bones and the find of the animal statuette, would indicate that we have here to do with a prehistoric layer, but the bricks are probably of Mussulman manufacture. We were left somewhat in doubt as to this curious find.

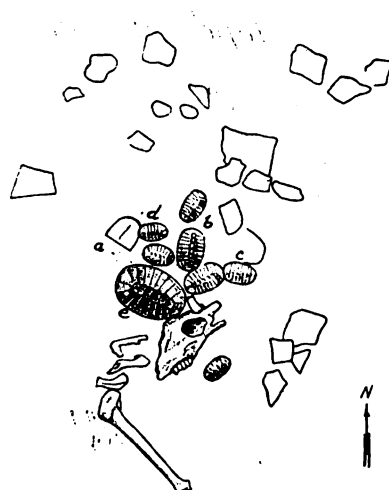


Fig. 86

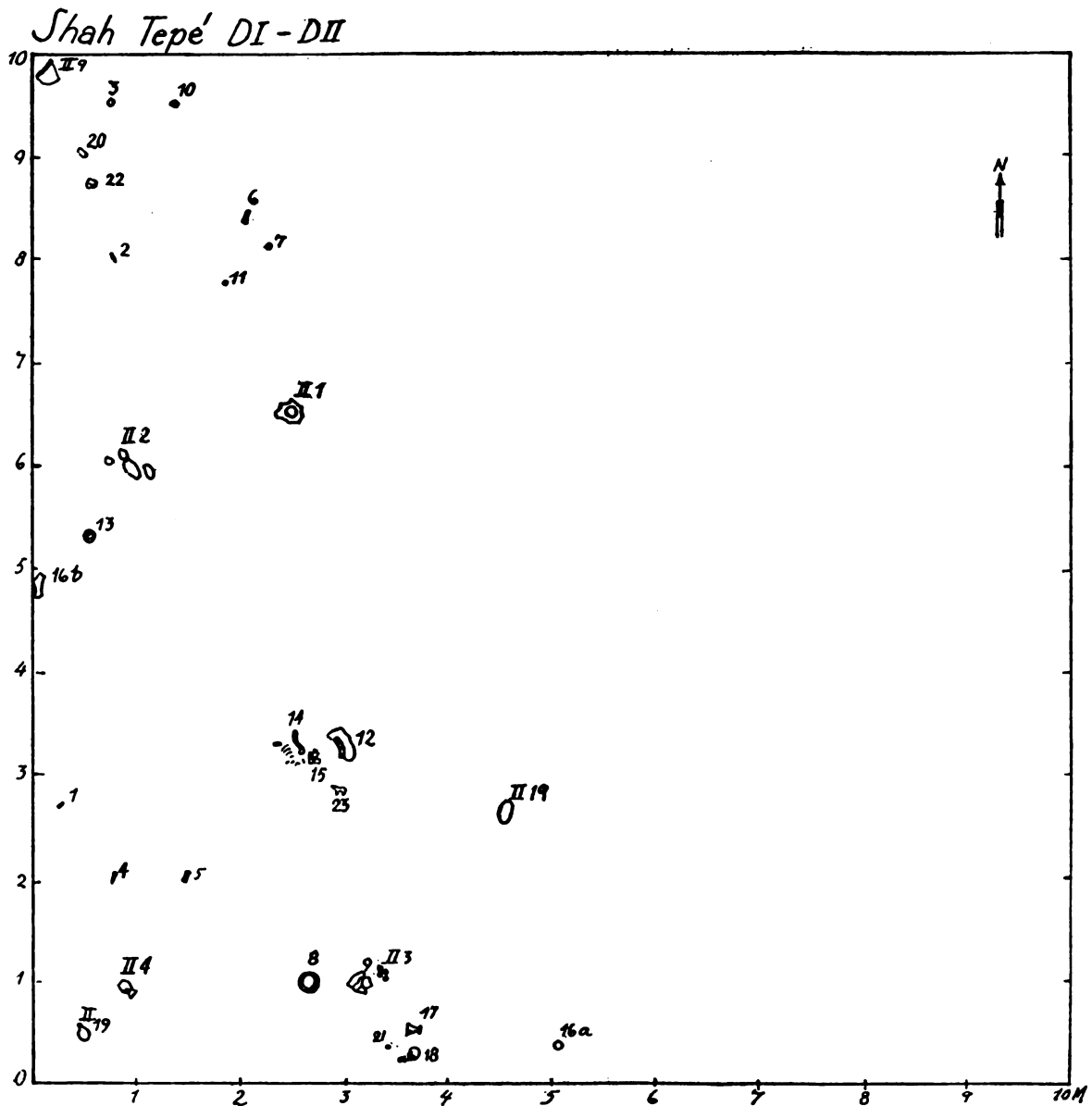


Fig. 87

Farther to the south lay another *collection of bones* (D III, 7 at +1.50 m.), belonging to different kinds of animals.

Stratum II (Fig. 87).

A small number of loose finds of clay vessels characterises this level, although one is not in a position to make more than a rather rough classification. An *egg-shaped vessel* lay in D II, 4 in the south-west corner at +2.90 m., together with a couple of broken vases, and then remains of a *cylindrical vessel* were found in D

II, 6 at +2.75 m. near shaft B to the west. Certainly prehistoric are also the vessels found in D I, 17 and D I, 18, — a *goblet of red grained earthenware* and a *round black bottle*. They were both found near each other at +3.60 m. and +3.50 m. *Black potsherds* lay in D I, 15 at +3.90 m., and a *biconical black clay vessel* as high as +4.10 m. (D I, 13). The boundary between D II and D I might be drawn at about this level or rather higher. To D II I would then ascribe a gigantic *grey jar* of thick ware and with a low, but wide, splayed neck (D II, 12, 14), another *animal statuette* in clay (D I, 23 at +3.40 m.), the *tortoise shell* in D I, 19 (+3.80 m.), *rivet-heads of copper* (D I, 21, +3.50 m.) and also a collection of 5 *millstones* (Pl. VIII, Fig. 88), lying together in D II, 2 at +3.00 m. (nos. 407—410, D II, 2).

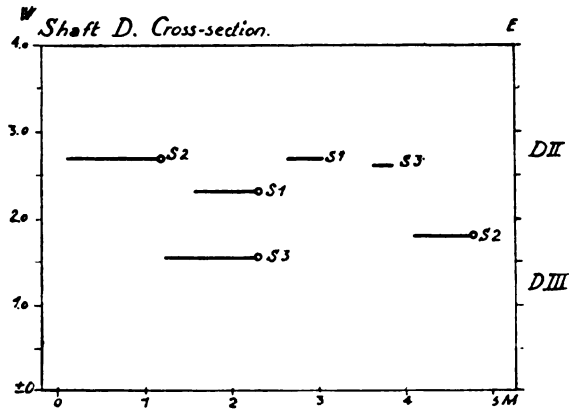


Fig. 89

Stratum I.

Some few objects may with certainty be ascribed to this stratum over +4.10 m. Here belong a probably *Abbasid* copper-mixed coin (D I, 7) at +4.60 m., a *nail-head of iron*, and the remains of some *clay vessels*, some in D I, 12 at +4.10 m. But also in this layer a number of prehistoric fragments had been thrown up in connection with excavation during Mussulman time.

Summary.

Three strata seem, although with difficulty, to be distinguishable, namely, III from +1.50 m. to +2.70 m., II from +2.70 m. to +4.10 m. and I from +4.10 or rather higher up to the surface (Fig. 89).

APPENDIX TO FIG. 16

A III

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton (no finds)	+ 0,60	
S ²	Skeleton	+ 0,60	308, 309
S ³	Skeleton	— 0,60	396, 437
S ³ a	Skeleton (no finds)	— 0,60	
S ⁴	Skeleton	— 0,60	397, 398—402, 414, 433, 434, 436
S ⁵ (south)	Skeleton	— 0,60	500
S ⁵ a (north)	Skeleton (no finds)	— 0,50	
S ⁶ a	Skeleton	— 0,65	588, 589
1	Black- on red painted sherds	+ 60	
1, a, b	Bone point & copper pricker	+ 60	313, 314
2	Fragmentary clay vessel	+ 60	329
3	Flat stone fragment	0,0	340
4	Pestle of stone	0,0	341
5	Flint flake	— 0,25	370
6	Stone fragment	— 0,25	371
7	Biconical sling bullets	— 0,25	372
8 a, b	Biconical sling bullets	— 0,60	411—412
8 c	Water-polished stone	— 0,60	413
9	Mould of clay (?)	+ 0,40 (?)	591
10	Clay vessel	— 0,30	
11	Millstone	— 0,60	449
12	Pottery sherds	— 0,60	
13 (on plan no. 18 a)	Sherds of pottery	+ 0,90	

Other objects from A III: no. 328 biconal sling bullet, no. 335 sealshaped clay button, no. 336 white oval, partly polished stone, no. 356 rounded irregular stone with two flat sides, no. 357 horn-shaped part of clay vessel, 358—361 biconical sling bullets, no. 446 two pointed bone implements, no. 447 slightly polished stone with square section, no. 463 flint flake, no. 464 biconical sling bullet, no. 510 flint nucleus, no. 512 millstone no. 522 stone pestle (?), no. 523 flint flake, nos. 524, 525 bone chisels, no. 526 pierced bone implement, no. 527 fragment of copper knife (?), no. 528 copper implement, no. 534 cylindrical alabaster (?) bead, no. 546 millstone, nos. 581, 582 flint flakes, no. 583 fragmentary bone point, no. 590 lapis lazuli bead, no. 650 copper awl.

APPENDIX TO FIG. 18 a

A II b

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ⁶ b	Skeleton	0,80	544, 545
S ⁷	Skeleton	2,10	
S ⁸	Skeleton	1,25	325
S ⁹	Skeleton	1,50	295
S ¹⁰	Skeleton	1,50	365
S ¹¹	Skeleton	1,45	
S ¹²	Skeleton	1,10	715—719
S ¹³	Skeleton	0,95	720—721
95	Millstone	1,25	297
96	Millstone	1,25	298
97	Millstone	1,00	299
98	Millstone	2,50	310
99	Fragments of pottery	2,00	
100	Fragments of pottery	0,70	
101	Millstone	0,70	311
102	Bone point	2,00	339
103	Biconical sling bullet	3,10	366
104	Bone point with incisions	3,10	367
105	Bone pin	3,00	368
106 a (north)	Fragments of clay vessel	3,00	
b (south)	Biconical bead of red stone	0,60	380
107	Millstone	3,00	381
108	Millstone	0,60	382
109	Fragment of pottery	0,90	

Other objects from A II: no. 48 piece of alabaster, no. 52 bone point, no. 53 whorl of clay, no. 55 biconical whorl of clay, no. 56 flint flake, no. 83 fragment of animal's tooth, no. 84 flint flake, no. 85 boar's tooth, no. 86 flint flake, no. 87 round sling bullet, no. 88 two fragments of burnt bone, no. 130 fragmentary bone chisel, no. 131 flint flake, no. 132 flint flake, no. 133 bone chisel, no. 138 half clay wheel, no. 164 biconical sling bullet, no. 165 half alabaster whorl, no. 166 fragment of fish-bone (sturgeon), no. 167 bone point, no. 168 flint flake, no. 169 millstone, no. 278 biconical sling bullet, no. 279 fragment of polished alabaster, no. 228 bone point, no. 281 copper pin with spiral head, no. 282 flat rounded slaty stone, no. 283 black clay bead with notched edges, no. 284 half flat stone, no. 285 bone pin, no. 286 pointed bone implement, no. 287 pointed bone implement, no. 288 fragmentary copper pin, no. 306 flint flake, no. 315 clay statuette (?) of animal, no. 326 flint flake, no. 337 flint flake, no. 338 round bead (?) of clay, no. 369 flint flake, no. 379 biconical sling bullet, no. 445 fragment of alabaster plate, no. 457 bone pin, no. 458 round miniature clay cup, no. 459 flint flake, no. 460 flint flake, no. 469 bone chisel, no. 470 bone chisel, no. 471 bone pin with round section, no. 472 bone chisel, no. 702 clay whorl (?), no. 703 biconical clay wheel (?) or whorl, no. 704 clay whorl, no. 705 black bead of clay, no. 723 flint flake, no. 724 flint flake, no. 733 fragments of copper pin.

APPENDIX TO FIG. 18 b

A II a

No. on the plan	Object	Height over the ± O-point	Inv. no.
S ¹	Skeleton	4.60	
S ²	Skeleton	4.60	62
S ³	Skeleton	4.35	
S ⁴	Skeleton	4.10	43, 61—64
S ⁵	Skeleton	4.00	65—68
S ⁶	Skeleton	3.10	196—198
1	Fragment of vessel	3.80	
2	Bone pin	4.50	49
3	Pottery fragments	4.00	
4	Pottery fragments	4.00	
5	Clay pyramid	4.75	46
6	White polished stone	4.00	51
7	Bronze ring (Mussulman)	4.70	31
8	Fragment of copper knife	4.20	42
9	Bead of lapis lazuli	4.60	45
10	Flint flake	3.70	44
11	Bone chisel	2.10	95
12	Copper awl	3.80	69
13	Indeterminate object	4.50	
14	„ „		
15	„ „	4.50	
16	„ „	4.80	
17	Dog's tooth	4.45	250
18	Black polishing stone and clay disc etc.	4.20	128 & 251
19	Flint flake and sherds (?)	3.60	252
20	Shell bead and other fragments	4.20	253
21	Bead or whorl of glass etc.	4.85	254
22	Round flat stone and handle of vessel	4.90	255, 47
23	Copper pin	5.40	97
24	Flint flake	5.40	98
25	Bone chisel	3.20	99
26	Indeterminate object	3.50	
27	Flint flake	3.10	100
28 a	Flint flake	2.30	101
b	Copper pin	2.30	102
29	Stone fragment (of millstone?)	5.40	103
30	Bone whorl	3.50	70
31	Bead or little whorl of clay	4.00	71
32	Fragment of bone pin	3.80	72
33	Grey vessel, fragmentary	3.70	80
34	Fragment of vessel	4.00	
35	Round clay disc and fragments of copper needle	5.40	73, 74
36	Bone implements & tooth of boar	4.00	75
37	Flint flake and whorl	4.50	76, 77
38	Whorl of clay	4.60	78
39	Part of clay bowl	4.40	81
40	Copper awl, fragmentary	5.40	58
41	Bone instrument (?)	5.00	59
42	Glass fragments (?)	3.60	
43	Flint flake	3.50	79

No. on the plan	Object	Height over the ± 0-point	Inv. no.
44	Two-horned stone.....	5,30	134
45	Clay vessel	2,20	129
46	Female statuette of clay	2,10	116
47	Fragmentary vessel	2,50	
48	Millstone	2,90	135
49	Millstone	2,90	170
49 a	Millstone	2,90	171
50	Millstone	2,90	172
51	Flint flake (?)	2,80	
52	White, partly polished stone	2,80	117
53	Bone chisel	2,80	139
54	Fragmentary copper knife (?)	2,70	140
55	Base of a footed and stemmed vessel	2,90	145
56	Fragments of vessel.....	0,90	
57	Flint flake	2,40	141
58	Copper knife (?), fragmentary	2,40	142
59	Flint flake	2,40	143
60	Humerus of animal	2,80	144
61	Hammer-shaped clay object	2,80 (5,20)	118
62	Copper pins	5,20	119
63	Conical white stone button	5,20	120
64	Fragments of copper awl	2,40	173
65	Copper awl	2,40	174
66	Handle of vessel	2,50	175
67	Handle (?) of vessel	2,50	176
68	Flat, partly polished stone	3,80	204
69	2 round sling bullets & a whorl.....	1,80	205
70 b (to the right)	Sling bullet	1,80	206
71 = 70 a (to the left)	Point of bone implement	1,50	207
72	Boar's tooth and flint flake.....	1,80	208
73	Flat oval stone	1,80	209
74	Copper pricker	4,50	210
75 a	Natural stone	3,00	177
75 b	Natural stone	1,80	
76	Little stone with oval section		211
77	Part of millstone	1,80	212
78	Millstone (?)	1,80	
79	Copper pin (?)	1,70	
80	Sling bullets (?)	1,25	229
81	Copper awl	1,40	230
82	Copper pin	4,30	231
83 a (to the left)	White round polished stone	1,20	233
83 b (to the right)	Spear-head of copper	1,30	232
84	Round polished stone	1,25	234
85	Millstone	4,30	235
86	Polished broken stone	1,20	236
87	Black polishing stone.....	1,20	237
88	Millstone	1,20	238
89	Polished triangular but rounded stone	1,25	239
90	Polished white stone	1,25	240
91	Bone point (animal's tooth?)	1,50	241
92	Flint flake	1,25	242
93	Flint flake	1,25	243
94	Flint flake	1,00	289

APPENDIX TO FIG. 22

A I

No. on the plan	Object	Height over the ± O-point	Inv. no.
S ¹	Skeleton	6,20	
S ²	Skeleton	6,25	
S ³	Skeleton	6,20	
S ⁴	Skeleton	6,30	
S ⁵	Skeleton	6,40	
S ⁶	Skeleton	6,25	
1	Stone mace-head	6,80	1
2	Oval millstone	5,30 (?)	16
3	Upper part of clay vessel	5,00 (?)	41
4	Round clay bead	6,10	19
5	Thin bronze sheet	5,70	20
6	Oval storage jar with handles	5,70	307
7	Sherd (?)	5,50	
8	Neck of red vessel	5,80	17
9	Neck of red vessel	6,20	9
10	Neck of red vessel	6,20	8
11	Bottom of vessel	5,50	4
12	Knobbed lid of vessel	6,60	82
13	Bead or whorl of glass	6,60	32
14	Oval slate disc with stringhole	6,10	54
15 a = 19, (north)	Copper pricker	5,40	96
15 b (west)	Copper pricker	5,30	
16	Door socket of stone	5,30	40
17	Neck of red vessel	5,10	7
18	Flat millstone	5,40	15
19	Bottom of vessel with vertical ear (to the left)	5,30	39
20	Iron hoe	5,50	10
21	Bronze sheet with teeth	6,30	11
22	Flint flake	6,10	21
23	Polishing stones (?)	5,10	5,6
24	Bronze band with iron rivets	5,70	22
25	Brick	6,80	23
26	Brown polished stone	6,50	50
27	Iron sheet	6,20	13
28	Flint flake	6,50	12
29	Flint flake	5,65	24
30	Bronze fragment	5,50	25
31	White polished stone	5,30	26
32	Flint flake	5,90	27
33	Black polished oval stone (?)	5,90	28
34	Bone chisel	6,50	33
35	Copper pin	6,50	34
36	Flint flake	6,55	29
37	Reddish cooking pot	6,40	60
38	Glass neck	6,05	57

Other objects from A I: inv. nos. 2 bronze ring, 3 foot of vessel, 4 glass fragment, 18 fragments of copper pin, 30 black, partly polished stone, 35 fragments of copper pin, 36 «sliding-stone» of clay, 37 fragments of copper pin, 38 flint flake.

APPENDIX TO FIG. 25

C III

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	0,30	668—670
S ²	Skeleton	0,35	1171, 1172
IIS ¹⁴	Skeleton	1,00	671—673
IIS ¹⁵	Skeleton	0,95	639—641
IIS ¹⁶	Skeleton	0,95	
IIS ²¹	Skeleton	0,70	1140—1141
IIS ²²	Skeleton	0,80	
1.....	Black sherds of pottery	0,10	
2.....	Fragment of copper.....	0,10	
3.....	Flint flake	0,20	657
4.....	Fragmentary spearhead of copper	0,40	651
5.....	Bone pin	— 0,20	678
6.....	Animal's tooth.....	— 0,20	
7.....	Clay statuette of animal	0,00	684
8.....	Fireplace (red-coloured earth with 2 burnt spots)	— 0,15	
9.....	Irregular miniature clay bottle	— 0,35	706
113.....	Flat stones (millstone)	1,50	
114.....	Two flint flakes	1,40	645, 646
115.....	Three clay vessels, probably from a grave	0,90	
116.....	Three stones under skeleton S15 (one millstone)	0,75	686
117.....	Copper fragments, statuette of animal (?)	1,00	
118.....	Red clay statuette of animal	1,40	1084
119.....	Fragments of red-brown cooking vessel	1,10	
120.....	Large vessel of coarse ware (?) with animal's bones	1,00	1303
121.....	Millstone	0,70	
122.....	Bone chisel	0,60	

Other objects from C III: no. 575 round, black clay bead, no. 579 flint flake, no. 580 flint flake, no. 586 flint flake, no. 593 fragments of copper pin with flat, round head, no. 595 flint flake, no. 643 little clay wheel, no. 679 and 683 pieces of transparent gypsum, nos. 680—682 three flint flakes, no. 685 torso of black clay statuette of animal, no. 907 green polishing stone, no. 908 bone awl, no. 909 flint flake, no. 910 flint flake, no. 911 bone awl, no. 912 bone awl, no. 913 bone awl with two points, no. 914 egg-shaped sling bullet, nos. 916—919 four flint flakes, no. 920 long limestone bead, no. 921 fragmentary bowl, no. 922 flint flake, no. 1177 round clay disc with spiral ornament, no. 1178 fragmentary bone implement, no. 1263 fragment of copper bracelet (?), no. 1264 copper pin, nos. 1265—1271 seven flint flakes, no. 1272 flat, round, black stone, no. 1273 little gypsum bead (?).

APPENDIX TO FIG. 26

C II b

No. on the plan	Object	Height ober the \pm O-point in metres	Inv. no.
S ⁴	Skeleton	3,00	
S ⁵	Skeleton	3,00	
S ⁶	Skeleton	2,75	501—503
S ⁷	Skeleton	2,75	541—543
S ⁸	Skeleton	2,75	504—505
S ⁹	Skeleton	3,00	
S ¹⁰	Skeleton	2,00	539, 540
S ¹¹	Skeleton	1,60	
S ¹²	Skeleton	2,40	536—538
S ¹² a	Skeleton	3,20	
S ¹⁶	Skeleton	1,60	817—820
S ¹⁷	Skeleton	1,60	821—824
S ¹⁸	Skeleton	2,00	
S ¹⁹	Skeleton	1,30	949—952
95	Millstone	3,30	443
96	Millstone	3,30	444
102	Millstone	3,20	
103	Fireplace	3,20	
104	Flint balls	3,20	
105	Lower jaw of man under stones	3,20	
107	Flint balls	3,40	
109	Foot of black clay vessel (•fruit-stand•)	3,30	
110	Bone implement	2,75	
111	Clay head of animal near skeleton of sheep (?)	2,60	

Other objects in C II: no. 160 copper spearhead, no. 161 half whorl of clay, no. 199 half whorl of clay, no. 202 fragment of iron sheet, no. 246 piece of limestone with rectangular section, no. 247 fragments of copper sheet, no. 248 flint flake, no. 249 flint flake, no. 277 (near S⁹) black clay statuette of animal, no. 290 whorl of black sherd, no. 291 whorl of clay, no. 292 copper pin, no. 316 bone chisel, no. 344 flint flake, nos. 346—348 flint flakes, no. 349 copper tack, no. 354 white polished limestone (Mesozoic liver limestone), no. 355 flat oval polished stone, no. 362 hammer-shaped clay object, no. 363 flint flake, no. 383 spiral bead of copper, no. 384 fragments of copper pin, no. 388 spout of clay vessel with 4 pierced holes, no. 403 flint flake, nos. 415—416, 2 sling bullets of clay, no. 417 2 fragments of copper pin with flat round head, no. 418 fragments of copper implement, no. 419 conical clay button, nos. 420—421 2 flint flakes, no. 441 38 round sling bullets, no. 473 flint flake, no. 478 pointed bone implement, no. 480 clay rattle, no. 481 round clay bead, no. 482 whorl of clay, no. 483 pointed bone implement, no. 484 bone chisel, no. 485 oval clay bead, no. 486 half flat oval stone with beginning of pierced hole, no. 487 crucible (?) of clay, no. 488 half clay wheel, no. 489 fragmentary clay whorl, nos. 490—495 6 flint flakes, no. 496 bone point, no. 506 bone pin with triangular head, no. 507 biconical whorl or bead, no. 509 75 biconical sling bullets, no. 517 millstone, nos. 547—550 4 flint flakes, no. 551 fragmentary copper implement, nos. 552—553 2 flint flakes, no. 554 copper chisel (?), no. 555 flint flake, no. 584 copper tack, no. 585 animal's head of clay, no. 647 flint flake, no. 648 bone point, no. 658 whorl or little wheel, no. 711 smashed clay bowl, no. 898 half of flat polished marble stone, no. 899 half of round limestone plate with biconical hole in the middle, no. 900 knocking stone, no. 901 sling bullet of clay, no. 902 half whorl of clay, nos. 903—905 3 flint flakes, no. 906 round clay bead, no. 960 little copper pricker no. 1014 little clay whorl, no. 1015 clay whorl or bead, no. 1119 fragment of oxidized copper, no. 1132 foot of vessel (?).

APPENDIX TO FIG. 27

C II b

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ^a b = 72	Skull of skeleton		427
S ^{1a}	Skeleton	2,40	634—636
66	Two fragmentary deep bowls	4,00	438
67	Crucible of sand and clay	4,10	428
68	Brick	4,40	
69	Fragments of clay vessel	4,10	
70	Large fragment of clay vessel	4,60	
71	Bone chisel with pierced hole	4,60	404
72	Cylindrical vase	4,60	427
73	Stone fragment (porphyry?)		
74	Half of oval, red, polished stone	4,50	422
75	Clay vessel, fragmentary	4,60	
76	Red-and-black painted sherds		
77	Smashed clay vessel	4,00	
78	Lead pin	4,00	423
79	Ox-head of clay	4,20	387
80 (N. W. of 73)	Copper fragments (?) Bone chisel	4,10	424
81	Black-on-red painted sherd		
82	Copper awl (or pin)	4,00	425
83	Copper fragments (bent wire)	4,20	426
84	Bone chisel	3,80	395
85	Biconical jar	3,60	498
86	Fragmentary vessel	4,20	
87	Fragmentary vessel	4,20 (?)	
88	Fragmentary vessel	4,20 (?)	
89 a, b,	Fragmentary vessel	4,20 (?)	
90	Large, egg-shaped clay vessel	3,60	535
91	Millstone	4,00	
92	Smashed clay vessel		
93	Flat oval pierced stone	3,90	
94	Smashed clay vessel	3,80	450
97	Bone awl	3,80	
98	Skull		
99	Copper point	about 4,30	456
100	Mace head of alabaster		479
101	Sling bullets of clay	3,80	440
106	Millstone	3,70	442
108	Foot of «fruit-stand» or lamp	4,30	439
112	Copper pin with spiral head	2,50	256

× × = smashed clay vessels.

APPENDIX TO FIG. 30

C II a²

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S3 a	Skeleton (without finds)	5,10	
39	Black-on-red painted sherd	5,45	
40	Flint flake	5,60	293
41	Half lid of black vessel	5,65	294
42	Handle of ladle (?)	5,45	
43 a	Fragments of deep bowl (proportions exaggerated)	5,45	296
43 b	Whorl	5,70	
44	Skeleton of animal	5,50	
45 a—c	Bone point and 2 flint flakes	5,40	317—319
46 a, b,	Bones of animal	5,30	
47	Clay spout (?)	5,50	
48	Copper pin with spiral head	5,10	330
49	Flint flake	5,10	331
50	Flint flake	5,20	332
51	Bead (?) of limestone	5,00	333
52	Black vessel	4,80	342
53	Millstone	5,00	373
54	Sherds of vessels	5,20	
55	Fragments of animal's skeleton	4,85	
56	Copper fragment	4,60	343
57 (a)	Crucible near sand-layer covered with coal ...	4,75	
58	Whorl	4,40	
59	Horn-shaped fragment of clay vessel	4,40	374
60	Flint flake	4,40	375
61	Yellow-red-and-black painted sherds	4,40	
62	Bone chisel	4,40	
63	Red-and-black painted sherd	4,40	
64	Jug with beak-shaped spot with horizontally cut mouth	4,30	377
65	Fragmentary clay vessel	4,20	

APPENDIX TO FIG. 31

C II a¹

No. on the plan	Object	Height ober the \pm O-point in metres	Inv. no.
S ¹	Skeleton (without finds)	5,80	
S ²	Skeleton	6,15—6,30	245, 264—276
1.....	Bottom of an alabaster vessel.....	6,00	186
2.....	Flat oval stone (slate) with pierced hole	5,80	187
3.....	Tooth of rodent (?)	5,80	188
4.....	Flint flake	5,80	189
5.....	Cylindrical bead of faience	5,80	190
6.....	Flint flake	5,80	220
7.....	Broken copper pin	5,75	221
8.....	Clay whorl	5,70	222
9.....	Flint flake	5,70	223
10	Flint flake	5,70	224
11	Handle of clay ladle	5,90	225
12	Tooth of animal	5,90	
13	Horn implement	5,90	226
14	Tunnel in the earth	5,60—6,10	
15	Flint flake	6,00	227
16	Flint flake	6,00	228
17	Animal's tooth.....	5,80	
18	Round stone	5,70	
19	Flint flake	5,70	
20	Piece of mussel.....	5,70	
21	Yellow whorl (glass?)	5,70	
22	Handle of clay ladle (?)	5,65	
23	Bottom of alabaster vessel	5,70	
24	Black sherds and bones of animal	5,70	
25	Bones of dog and sheep.....	5,75	
26	Spout and sherds of black vessel	5,60	
27	Sherd of pierced brazier	5,80	
28	Millstone.....	5,60	
29	Millstone.....	5,70	
30	Rib of animal	5,65	
31	Fragment of copper pin (?)	5,70	256
32	Flint flake and animal's bones	5,70	257
33	Neck of glass vessel	5,80	
34	Flint flake	5,80	
35	Flint flake	5,70	258
36	Fragments of copper pin	5,85	259
37	Four flint flakes	6,00	260 a—d
38	Skull of small rodent.....	5,70	

APPENDIX TO FIG. 32

C I

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S. 1	Skeleton (fragmentary)	7,00	106, 113
S. 2	Skeleton (fragments)	7,00	
S. 3	Skeleton (fragmentary)	6,90	
S. 4 + a, b	Skeleton (iron fragments, glass and clay lid)	6,90, 6,70	
S. 5 + a	Skeleton (red, handled vessel)	6,85	
S. 6	Skeleton	7,00	112
S. 7	Skeleton	6,70	
S. 8	Skeleton	6,90	
S. 9	Skeleton	6,80	
S. 10	Skeleton	7,10	
S. 11	Skeleton	7,00	114
S. 12	Skeleton	7,05	
S. 13	Skeleton	7,00	
S. 14	Skeleton	7,10	
S. 15	Skeleton	6,80	
S. 16	Skeleton (fragmentary)	7,00	115
S. 17	Skeleton (fragmentary)	6,70	
S. 18	Skeleton	6,50	
S. 19	Skeleton	6,70	
S. 20	Skeleton	6,25	
S. 21	Skeleton (fragmentary)	6,85	114
S. 22	Skeleton (fragmentary)	6,70	
S. 23	Skeleton (fragmentary)	6,30	
S. 24	Skeleton	7,00	
S. 25	Skeleton (fragmentary)	6,40	
S. 26	Skeleton	6,20	115
S. 5 a	Black bottle	6,70	
S. 8 a	Neck of red Mussulman vessel	6,90	
S. 9 a	Millstone	6,80	
1.....	White Mussulman clay bowl (?)	7,25	
2.....	Red and black painted sherds		105
3.....	Mandible of camel	6,60	
4.....	Low, red sooty jar with 2 ears	6,45	
5.....	Alabaster stone	6,30	
6.....	Flint flake	6,20	

APPENDIX TO FIG. 32

C I

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
7.....	Flint flake	6,20	156
8.....	Millstone	6,50	178
9.....	Flint flake	6,20	157
10	Whorl	7,00	94
11	Two flint flakes	6,70	107, 108
12	Fragmentary iron knife	6,80	109
13	Clay lid with button	6,90	110
14	Copper pricker	7,10	111
15	Glass vessel	6,20	122
16	Flint flake	6,20	123
17	Flint flake	6,20	124
18	Bone chisel	6,20	125
19	Biconical bead or whorl	6,80	126
20	Flint flake	6,20	179
21	Flint flake	6,20	180
22 a	Small round heavy red clay vessel	6,10	181
23	Half of an animal's tooth (fox or dog)	6,00	182
24	Whetstone (brown, oval section)	6,00	183
25	Flint flake	6,00	184
26	Flint flake	5,80	185

Other objects from C I: no. 104 fragmentary iron knife, no. 149 bone, no. 150 flint flake, no. 151 finger-ring of bronze with inscription in Arabic letters, no. 152 flint flake, no. 158 flint flake, no. 159 black-grey handle of vessel.

APPENDIX TO FIG. 35

E III

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	1,20	1214, 1215
S ²	Skeleton	0,10	1306—1310
S ³	Skeleton	0,90	
S ⁴	Skeleton	1,40	1396—1398
S ⁵	Skeleton	1,00	1489, 1490
S ⁶	Skeleton	2,35	1699—1708
S ⁷	Skeleton	2,20	1728—1731
S ⁸	Skull and fragment of skeleton	2,10	1732—1733
S ⁹	Skull of skeleton	2,20	
S ¹⁰	Fragments of skeleton	1,50	1735—1738
1.....	Big collection of black-on-red painted pottery	2,50	1121
2.....	Millstone	2,50	1122
3 a—c	Biconical, spouted vessel, deep bowl, bowl of lamp	1,85	1164—1166
4.....	Bowl of black 'fruit-stand'	1,10	1216
5.....	Bowl of black 'fruit-stand'	1,00	1301
6.....	Copper knife	1,05	1248
7.....	Storage jar, black-on-red painted.....	2,10	
8.....	Smashed black round storage jar	1,80	
9.....	Little black round jar with flat bottom	1,00	1570

Other objects found in E III: no. 1148 black-on-red painted clay statuette of animal, no. 1149 flint flake, no. 1150 4 Copper fragments, no. 1168, 1169 two bone points, no. 1170 half whorl of clay, no. 1193 round flat polished brown stone with white streaks, no. 1194 bone awl, nos. 1195—1196 2 flint flakes, no. 1197 little flat oval stone, nos. 1198—1199 2 biconical slingbullets of clay, no. 1200 fragment of copper pricker, no. 1231 twopointed bone implement, nos. 1232—1234 3 flint flakes, nos. 1235—1236 2 sling bullets, nos. 1249—1255 seven flint flakes, no. 1256 half bone awl, no. 1257 sling bullet, no. 1314 triangular stone, nos. 1315—1319 five flint flakes, no. 1320 black brown bone awl, no. 1333 flint ball, nos. 1334—1339 six flint flakes, no. 1340 biconical sling bullet, no. 1341—43 fragmentary pointed bone awls, no. 1344 broken copper knife, no. 1345 fragment of copper implement, no. 1593 segment of copper ring, nos. 1594 open copper bracelet, no. 1595 flint flake, nos. 1596—1596 a two bone pins with bullet-shaped heads, no. 1597 round stone disc 5,6×5,8 cm., no. 1598 miniature clay-cup of conical form, nos. 1599—1602 four bone awls, partly broken, nos. 1603—1613 eleven flint flakes, no. 1631 bone awl, nos. 1632, 1633 fragmentary bone implements, no. 1648 bone chisel, nos. 1649—1650 two flint flakes, no. 1651 half little polishing stone, no. 1652—1655 four flint flakes, nos. 1658, 1659 two flint flakes, no. 1660 little round pierced disc of stone, no. 1671 clay wheel, no. 1672 fragmentary red clay sculpture of animal, no. 1673 whorl of black-on-red painted sherd, no. 1674 red clay whorl, no. 1675 fragm. bone implement, no. 1676 long bone point, no. 1677 bone awl, nos. 1678, 1679 two bone chisels, no. 1680 flat stone disc with beginning of pierced hole, no. 1681 vase-shaped clay bead, no. 1682 cylindrical bead of lapis lazuli, no. 1683 little pierced stone disc, no. 1684 little polishing stone, no. 1685 flint flake, no. 1709 cylindrical bead of white stone, nos. 1739, 1740 two flint flakes.

APPENDIX TO FIG. 37

E II b

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ^a	Skeleton	4.00	953, 954
S ^b	Skeleton	4.65	877, 878
S ^c	Skeleton	4.70	985—987
S ^d	Skeleton	3.80	1029—1031
S ^e	Skeleton (fragmentary)	3.20	1032—1035
S ^f	Skeleton	3.00—3.10	1074—1075
S ^g	Skeleton (no finds)	4.20	
S ^h	Skeleton (fragmentary, no finds)	4.10	
S ⁱ	Skeleton	4.40	1512—1515
S ^j	Skeleton	4.40	1516—1518
S ^k	Skeleton (fragmentary, no finds)	4.00	
S ^l	Skeleton	4.65	1693—1696
15	Little jar (cooking vessel?)	4.15	876, Pl. LXXXIX c
16	Pottery fragments (?)	3.45—3.50	
17	Lid; tall cylindrical vase	4.70	1036, 1458
18	Dish of clay (diam. 35 cm.)	3.20	1625
20	Oval, canteen-shaped vessel with snake ornament	4.65	1771
21	Round black vessel with neck and handle	4.50	1668
22	Bellied jar	3.50	1734

Other objects found in E II: nos. 592 fifteen fragments of copper or bronze sheet, 601 cylindrical diorite pestle, 602 fragment of round slightly flat stone with pierced middlehole, 603 round, flat black stone, 604 ornamented islamic bone whorl, 649 oval flat stone «pendant» with pierced hole, 652 ball-shaped clay bead, 653 round clay bead, 654—655 two flint flakes, 676 flint flake, 677 pin of lead or silver (?) with spiral head, 687 oval faience bottle, 696 fragments of copper pricker, 697—698 two flint flakes, 737 half pear-shaped alabaster mace, 738 flint flake, 782—783 two flint flakes, 880 black clay statuette of animal, 881 part of copper pin, 882 three copper fragments, 883 flint flake, 884 lid with two pierced holes, 885 clay whorl, 886 oval alabaster bead, 887 bone chisel, 888 oval flat stone «pendant», 889—890 two round sling bullets of clay, 891—894 four flint flakes, 933 copper pin with triangular head and two other copper fragments, 934 bone implements pointed at both ends, 935 bone implement, 936 fragmentary bone implement, 937—938 two flint flakes, 939 round stone pendant (?), 940 three copper fragments, 941—944 four bone chisels, 945 pointed bone implement, 946 broken bone chisel, 955 half of little round vessel, 956—957 one and a half bone implement, 991 white partly polished pebblestone, 992 fragmentary clay wheel, 993 two fragments of copper pin, 1068 broken copper pin, 1069 whorl of reddish stone, 1070 flint flake, 1093 five fragments of copper pin, 1094 copper pricker, 1095 broken copper pin, 1096 fragments of copper pricker, 1097 bone awl, 1098—1102 five bone implements, mostly chisels, 1103—1109 seven flint flakes, 1110 bead or whorl of clay, 1111 vessel-shaped bead of clay, 1112 black oblong polishing stone, 1113—1115 three flint flakes, 1116 sling bullet of clay, 1117—1119 copper fragments (pin etc.), 1123 rectangular polishing stone, 1124 millstone, 1125 door hinge stone, 1488 half of a biconical vessel, 1491 stone pestle, 1492 bone implement pointed at both ends, 1493 bone awl, 1494—1496 bone implements (partly fragmentary), 1507—1508 flint flakes, 1509—1511 three bone implements, 1541 copper pin, 1542 seven fragments of copper pin with triangular head, 1543 copper tack, 1544 bone pin, 1545 fragmentary clay wheel, 1546 flint flake, 1547 flat round head of copper pin, 1548 copper awl, 1549 sling stone of clay, 1550—1553 four flint flakes.

APPENDIX TO FIG. 38

E II a

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	6,20	663—665
S ²	Skeleton	6,30	667
S ³	Skeleton (fragm.)	6,10	617—629
S ⁴	Fragments of skeleton	6,40	630—631
S ⁵	Skeleton (fragm.)	5,30	749, 751
S ⁷	Skeleton (fragm.)	4,90	
S ¹³	Skeleton	5,00	1429—1431
1	Fragments of big clay vessels	6,30	
2	Fragments of big clay vessels	6,10	
3	Collection of 12 silverdirhems (mentioned in text under E I)	6,30	597
4 = S ⁴			
5	Animal's skeleton	5,60	
6	Fragments of copper	6,30	
7	Globular clay vessel	5,90	632
8	Globular clay vessel	6,00	633
9			
10	Globular clay vessel with neck	6,50	712, Pl. LXXXIX d
11	Globular clay vessel with neck	6,20	713
12	Oval clay vessel	6,30	714
13	Grey-black clay vessel	5,30	776
14	Smashed rounded clay vessel	5,20	777
19	Biconical vessel	4,80	

APPENDIX TO FIG. 39

E I

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	7,00	
S ²	Skeleton	6,70	
S ³	Skeleton	6,80	
S ⁴	Skeleton (millstone)	6,80	
S ⁵	Skeleton	7,00	
S ⁶	Skeleton	6,80	
S ⁷	Skeleton	6,80	
S ⁸	Skeleton	6,80	
S ⁹	Skeleton (millstone to the left on 7,20)	6,50	
S ¹⁰	Skeleton (fragm.)	6,80	
S ¹¹	Skeleton	6,70	
S ¹²	Skeleton and animal's bones	7,00	
S ¹³	Skeleton	7,00	
S ¹⁴	Skeleton (fragm.)	6,80	
S ¹⁵	Skeleton	6,80	
S ¹⁶	Skeleton	6,30—6,60	
S ¹⁷	Skull	6,60	
S ¹⁸	Skull	6,80	
S ¹⁹	Skull	6,40	
S ²⁰	Skull	6,80	
S ²¹	Skeleton	6,35	
S ²²	Skeleton	6,40	
S ²³	Skeleton (millstone in sw)	6,50	
S ²⁴	Skull	6,40	
S ²⁵	Skeleton	6,40	
S ²⁶	Skeleton	6,00	
1.....	Door-hinge-stone	6,90	
2.....	Millstone and other stones.....	7,00	
3.....	Smashed black vessel	6,00	
without no.	Millstone (= blue stone, east)	6,30	
" "	" (south west)	7,20	
" "	" (south-east)	6,40	

Other objects from E I: nos. 508 islamic bone whorl, 518 islamic bone whorl, 519 and 520 two flint flakes, 521 flat disc-shaped stone pierced with a hole, 529 four bronze fragments, 530 flint flake, 531 black bone chisel, 533 bronze or copper fragments, 596 fragment of broze sheet, 597 (see E II) 12 arabic dirhems, 598 millstone, 605 little green glass bottle, 606 little black green glass bottle, 607 three iron fragments, 608 fragments of bronze wire; some bricks and animals' bones.

APPENDIX TO FIG. 43

F III

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Child's skeleton.....	2,95	1323—1327
S ²	Child's skeleton.....	2,90	1401, 1402, 1435
S ³	Skeleton (round white stone and copper pin)	2,25	1403
S ⁴	Skeleton	2,15	
S ⁵	Skeleton	2,00	
S ⁶	Skeleton	2,05	
S ⁷	Skeleton	1,95	
S ⁸	Skeleton	2,15	
S ⁹	Skeleton in fragments (vessel)	2,10	1436—1437
S ¹⁰	Skeleton without skull	1,65	
S ¹¹	Fragments of skeleton (legs)	1,65	
S ¹²	Skull	0,85	
S ¹³	Skeleton of child.....	2,25	1626—1628
S ¹⁴	Skull (between 15 and 16)	2,30	
S ¹⁵	Skull (= 14?)	2,30	
S ¹⁶	Skull (vessel)	ab. 2,30	1629—1630
S ¹⁷	Skeleton	0,50	
S ¹⁸	Skeleton	0,65	1646
S ¹⁹	Skeleton	0,35	1647
S ²⁰	Skeleton	0,60	
S ²¹	Skeleton	0,05	1656, 1657
1.....	Little biconical clay vessel	2,70	1328
2.....	Brick	2,70	
3.....	Clay dish	2,70	1373
4.....	Millstone	2,85	
5.....	Door-hinge-stone(?)	2,55	
6.....	Millstone	2,55	
7.....	Foot of «fruit-stand»	2,75	
8.....	Biconical black-on-red painted jar	2,30	1400
9.....	Millstone	2,45	
10.....	Millstone	2,65	
11.....	«Fruit-stand» of clay	2,45	1399
12.....	Fire place	2,35	
13.....	Black-on-red painted sherds	2,30	
14 (middle)	Mill stone	2,25	
14 (east)	Redbrown kettle of coarse ware with short spout	2,60	
15.....	Flat stones.....	2,35	
16.....	Millstone on red-burnt clay	2,25	
17.....	Depot of smashed vessels	0,75—0,90	1773, 1774
18.....	Millstone	1,15	
19.....	Red burnt clay floor with part of bowl	2,50—2,55	1645
20.....	Hard packed clay flooring with traces of coal	0,75—0,80	
21.....	Fragment of big vessel	0,80	
23.....	Spear- or arrow-head of black flint	0,05	1667
East of 5,6	Skull of <i>Bos brachyceros</i> Arnei	2,00	

Other objects from F III: nos. 1378 knife or spear head of copper, 1379 clay wheel, 1380 short handle of bone, 1381 half chipping stone of flint, 1382 bone awl, 1383 bone pin, 1384 biconical sling bullet of clay, 1385—1386 two bone chisels with concave edge, 1387—1395 nine flint flakes, 1404 two fragments of copper pin, 1406—1417 twelve flint flakes, 1418 lid of vessel with two pierced holes, 1419 flint flake, 1420—1425 sling bullets of clay, 1438 foot of clay vessel, 1439 black polished stone pestle, 1440 flint flake, 1441—1443 sling bullets of clay, 1444 fragmentary clay statuette of animal, 1445—1455 eleven flint flakes, 1456 bone awl, 1457 biconical sling bullet, 1462 bone implement, 1463—1478 sixteen flint flakes, 1479 half perforated ball, 1480 round bead or whorl of clay, 1481 copper pricker, 1482 copper sheet, 1483 fragments of copper pin, 1484 copper tack, 1485 red clay disc, 1486 round clay bead, 1487 flat round stone disc, 1523 fragmentary clay wheel, 1524 foot of clay statuette of animal, 1525—1526 two bone awls, 1527—1539 thirteen flint flakes, 1540 cross-shaped clay fragment, 1556 red clay disc, 1557—1559 awl, chisel and fragment of bone, 1560—1566 seven flint flakes, 1567 vase-shaped clay bead, 1568—1569 two sling bullets of clay, 1574 chipping stone of flint, 1575 red clay disc, 1576 indetermined clay object, 1577—1579 three sling bullets, 1580 polishing stone, 1581 red clay bead, 1582 bone chisel, 1583—1589 seven flint flakes, 1590 stone pestle, 1591 copper pin with spiral head, 1592 flint flake, 1614—1624 flint flakes, 1634—1635 two flint flakes, 1636 whorl of clay, 1637 bullet or rattle of clay (?), 1638—1644 seven flint flakes, 1661 clay whorl, 1662—1666 five flint flakes; piece of slag.

APPENDIX TO FIG. 48

F II b

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ⁴	Skeleton	4.55	1126—1130
S ⁵	Skeleton	4.00	1217
S ⁶	Child's skeleton (fragm. of clay vessel).....	4.10	
S ⁷	Skull	3.90	
S ⁸	Skull and fragments of skeleton	3.85 à 3.90	
9.....	Heap of stones	4.30	
10	Part of clay statuette of animal (and frag- ments of vessels and bones)	4.05	1374
11	Black-on-red painted clay statuette of animal (and arrangement of stones)	4.40	1375
12	Globular vessel, bone chisel	3.90	1191
13	Millstone	3.30	
14	Redbrown vessel with short lip	2.00	
15	Round clay bowl	3.80	1357
16	Woman's torso of black clay	3.80	1358
17	Millstone	3.70	

Other objects from F II: nos. 868 little red clay disc pierced with two holes, 869 whorl, 870 chipping stone of flint, 871 flint piece, 872, 873 fragmentary bone implements, 874 flint flake, 875 two fragments of copper pricker and pin, 977 flint flake, 978 copper fragment (spear head?) 979 copper button, 1001 red bottle-shaped handled jug, 1012 fragmentary copper pricker, 1052 copper pricker, 1062 fragment of iridescent glass, 1063 bone implement pointed at both ends, 1064 ornamented pointed bone implement, 1065—1067 three flint flakes, 1085 «dumbbell» of clay, 1089 copper pricker, 1090 cylindrical little clay object with concave under side, 1151 bone implement, 1152—1153 two flint flakes, 1202 cylindrical whiteblue stone bead, 1203—1206 four flint flakes, 1207 sling bullet, 1208 round clay object, 1209 sling bullet (?), 1218 bone chisel, 1219 bone chisel, 1220 flint flake, 1221 copper pricker 1222 copper fragments, 1237, 1238 two bone chisels, 1239 hollow bone instrument, 1240 broken bone implement, 1241 bone chisel, 1242 biconical sling bullet, 1243 clay lid with two pierced holes, 1274 seven copper fragment, 1275 biconical bead of green veiny stone, 1276 copper pin with spiral head, 1277 copper pin with buttonshaped head, 1278—1280 three whorls of clay, 1281 cylindrical clay bead, 1282—1284 three bone chisels, 1285 little flat clay disc, 1286 clay wheel, 1287 half chipping stone, 1288—1299 twelve flint flakes, 1300 flat oval limestone (?), bead, 1311 bone chisel, 1312—1313 two flint flakes, 1356 lid of clay with broken handle, 1359 earring of copper, 1360 copper pricker, 1361 copper nail with head, 1362 fragmentary copper pin, 1363 copper pin with round head.

APPENDIX TO FIG. 49

F II a

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton (fragm.)	6,80	752—754
S ²	Skeleton (fragm.)	5,80	
S ³	Skeleton (fragm.)	5,20	
1.....	Biconical vessel.....	6,60	998—1000
2.....	Crescent-shaped razor of copper	6,60	778
3.....	Globular clay carafe	5,80	786
4.....	Sherds of big vessel	5,80	844
5.....	Spouted vessel	5,30	973
6.....	Smashed vessels and animal's bones	5,30	
7.....	Long cylindrical clay vessel	4,70	
F I 2	Cylindrical alabaster vase	6,00	722
8.....	Alabaster cup	4,70	

APPENDIX TO FIG. 51.

F I.

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	6,70	
S ²	Skeleton (bricks around the skull)	7,10	
S ³	Skeleton	7,00	
S ⁴	Child's skeleton.....	6,90	
1.....	Millstone	?	
			707

Other objects from F I: nos. 587 flat little stone with pierced hole (pendant?), 614 clay lamp (?), 615 cylindrical bead of clay, 616 fragmentary pin of copper or bronze, 659 bronze finger ring, 660—661 two flint flakes, 662 bronze mounting for knife-handle, 699—700 two flint flakes, 701 fragment of bronze comb (?), 702 clay wheel, 742 clay bead, without no. a Byzantine bronze clasp.

APPENDIX TO FIG. 55

G III

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	2,35	1433—1434 a
S ²	Child's skeleton.....	2,00	1426—1428
S ³	Skeleton	1,40	1571—1573
S ⁴	Fragmentary skeleton (lid)	1,40	
S ⁵	Skeleton	0,45	1697, 1698
S ¹⁸ (II)	Skeleton	2,75	1364—1365
S ¹⁹ (II)	Skeleton	2,60	
1.....	Tall and large jar (smashed).....	2,10	1461
2.....	18 + 34 cylindrical beads of hollow bone	2,40	1506
3.....	Small clay jar	1,50	1519
4.....	Trumpet-shaped foot of vessel	1,50	1554
5.....	Black long clay statuette of animal (13,6 cm)	1,30	1555
6.....	Fragments of cooking vessel	0,00	1669
7.....	(Foot of clay vessel (?)) probably door stone hinge	0,05	(1377?) = 1670
8.....	Round smashed vessel	2,05	
10	Red painted clay statuette of animal; is perhaps identical to no. 1741	2,80	
11	Red clay statuette of animal; is perhaps identical to no. 1741	2,80	

Other objects from G II: nos. 1459 fragments of copper pin, 1460 short black-grey clay statuette of animal, 1497 flint flake, 1498 biconical sling bullet, 1499 conical clay object, 1500 bobbin- or cotton reel-shaped clay object, 1501, 1502 two clay whorls, 1503 sculptured clay object, probably birdshaped (3,1 cm.) 1504, 1505 two flint flakes, 1670 door hinge-stone, 1686—1692 seven flint flakes, 1710 bone implement pointed at both ends, 1711 bone awl, 1712 bone awl, 1741 red clay statuette of animal (8,7 cm.), 1743 bone awl, 1744 flint flake.

APPENDIX TO FIG. 56

G II b

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹¹	Skeleton	3.95	1190—1191
S ¹²	Skeleton	3.90	1247
S ¹³	Skeleton	3.70	1244—1246
S ¹⁴	Skeleton	3.60	
S ¹⁵	Skeleton	3.50	
S ¹⁶	Skeleton	3.35	1302
S ¹⁷	Skeleton	3.70	2329—1332

Other objects from G II: nos. 744 one cylindrical glass bead and three alabaster beads, one bronze fingerring (probably from G II s¹), 895 thirteen round sling bullets of clay, 896 round flat alabaster bead, 897 half small copper or bronze wheel, 962 half clay bowl, 963 cooking pot with handle, 967 four fragments of iron knife, 968 white polished pebble, 969—971 three flint flakes, 972 copper pricker, 974 half clay wheel (belongs to 961 in C II), 975 copper fragment, 976 copper pricker, 1005 part of clay wheel, 1006 black polishing stone, 1007 brown polished pebble, 1008 rose-coloured polished pebble, 1009 flat oval small stone pierced with a hole in the middle, 1010 bone implement, 1011 bone chisel, 1013 alabaster bead, 1019 stone whorl, 1020—1023 four flint flakes, 1024 black polished pebble, 1025 millstone, 1157—1162 six flint flakes, 1163 fragmentary copper pricker, 1179 clay horn, 1180 stone adze, 1181 conical stone whorl, 1182—1183 two flint flakes, 1184 bone point, 1185—1187 three bone chisels, 1188 white clay wheel, 1210 perforated round clay ball, 1211—1212 two flint flakes, 1213 fragment of copper pricker, 1258 flint flake, 1259 long biconical stone bead, 1260—1261 two flint flakes, 1321 black clay lid with bent upper handle, 1322 grey-black lid with smashed upper handle, 1346—1349 b five flint flakes, 1350 bone implement with 3 incisions, 1351 bone awl, 1352—1354 three bone chisels, 1355 flint flake, 1366 clay lid with two pierced holes, 1367 clay lid = 1366, 1368 half chipping stone of flint, 1369—1370 two flint flakes, 1371 red clay wheel, 1372 round stone disc perforated in the middle and provided with five cavities, 1520 deep clay bowl, 1521 deep clay bowl, 1522 half eggshaped vessel, 1713—1714 two flint flakes, 1715 point of bone awl, 1716 flint flake, 1717 small piece of slag, 1718 two fragments of copper pin (?), 1719, 1720 two fragments of copper, 1721—1727 seven flint flakes.

APPENDIX TO FIG. 57

G II a

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	6,50	746—748
S ¹ a	Skeleton	6,50	841, 846
S ²	Skeleton	6,00	834—840
S ³	Skeleton	5,90	988, 989
S ⁴	Skeleton (vitrified bead and copperring covered with gold)	6,60	958, 959, 983, 984
S ⁵	Skeleton (six beads and copperring)	5,50	1002
S ⁶	Child's skeleton	5,30	—
S ⁷	Skeleton	6,00	1003, 1004
S ⁸	Skeleton	5,00	1076—1079
S ⁹	Skeleton	4,80	1080—1082
S ¹⁰	Skeleton	4,50	
1.....	Cooking pot with handle	6,00	
2.....	Handled vessel of clay	5,50	847 (probably from G II S ¹ a)
3.....	Kettle of coarse ware	5,10	
4.....	Round vessel	5,50	
5.....	Cylindrical vase with vertical handle on the mouth	5,50	1018
6.....	Fragments of three vessels	5,00	1120
7.....	Two millstones and sherds	4,90	1304, 1305
8.....	Fire-place	4,30	
9.....	Big stone and three small ones on burnt clay	4,30	

APPENDIX TO FIG. 59

G I

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	7,10	964—966
S ²	Child's skeleton.....	6,80	
S ³	Child's skeleton (fragments)	6,80	
S ⁴	Skeleton	7,40	
I.....	Bricks	6,50	

Other objects from G I: nos. 674 biconical stone bead, 675 biconical alabaster whorl, 743 two silver dirhems, 779 big iron nail, 780 flint flake, 813, 815 two sling bullets, 816 flint flake.

APPENDIX TO FIG. 65

H II

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	5,70	1760, 1761
S ²	Child's skeleton (fragments)	5,65	1762, 1763
S ³	Child's skeleton.....	5,70	1770
S ⁴	Skeleton	5,40	1764
S ⁵	Skeleton	5,30	
S ⁶	Skeleton	5,30	
I.....	Clay bottle.....	6,30	
2.....	Red-brown clay kettle	5,70	
3.....	Round small clay bottle	6,10	1765
4.....	Smashed vessel	5,10	
5.....	High clay vessel	5,40	
6.....	Big red vessel	5,40	
7.....	Clay rattle	5,00	
8.....	Clay lid with handle	5,00	1767

Other objects from H II: nos. 1746 bone chisel, 1747—1752 six flint flakes, 1753 white polished pebble, 1754 eggshaped white and red stone bead, 1755—1756 different parts of one earring of bronze, 1757 piece of slag, 1758 fragment of copper, 1759 flint flake, 1768 bone chisel, 1769 bone pin.

APPENDIX TO FIG. 68

H I

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Child's skeleton.....	7,40	1230
S ²	Skeleton (clay lamp)	7,20	
S ³	Skeleton	7,10	
S ⁴	Skeleton	7,20	
S ⁵	Child's skeleton.....	7,60	
S ⁶	Skeleton	7,40	
S ⁷	Skeleton	7,60	
S ⁸	Skeleton	7,30	
S ⁹	Skeleton	7,30	
S ¹⁰	Skeleton	7,40	
S ¹¹	Skeleton	6,90	
II S ⁷	Skeleton	5,90	1201
II S ⁸	Skeleton	6,00	
1.....	Brick	7,20	
2.....	Millstone	7,40	
3.....	Iron dish	7,30	

Many bricks at the eastern side.

Other objects from H I: nos. 1026 head of bronze nail, 1027 clay whorl, 1028 clay bead or whorl, 1042 half clay pyramid, 1043 stone idol, 1044—1045 two flint flakes, 1046 small clay lid, 1047 lilac coloured stamp-shaped stone with 3 polished sides (3,8 × 3,00 × 3,00 cm.), 1048 fragmentary copper (?) pin, 1049 handle of glass cup, 1050 almost cylindrical canelian bead, 1051 clay bead (or whorl), 1073 fragment of iron nail, 1086 irano-mongolian Ilkhan silver coin, 1087—1088 two big iron nails, 1138 fragmentary iron nail, 1134 fragment of copper pin, 1135—1136 two flint flakes, 1223 mussulman coin, 1224 six fragments of iron nails etc.

APPENDIX TO FIG. 73

B III

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Skeleton	1,80	947—948
S ²	Two skeletons	1,40	
S ³	Skeleton	1,20	
S ⁴	Skeleton	1,40	
S ⁵	Fragmentary skeleton	0,10	
S ⁶	Skeleton	0,00	754—758 772—773 825—828 775
S ⁷	Child's skeleton	2,90	
II S ¹⁵	Skeleton (fragm.)	2,80	
II S ¹⁹	Skeleton (fragm.)	2,70	
II S ²⁰	Skeleton	2,50	
II S ²¹	Skeleton (fragm.)	2,60	879
II S ²²	Child's skeleton (fragm.)	2,60	
II S ²³	Skeleton (fragm.)	2,20	
1	Black-on-red painted vessel-bottom	1,80	
2	Black-on-red painted sculpture (?)	1,50	
3	Slag	1,20	997 ?
(4)	Slag or crucible	1,30	
5	Foot of vessel	1,20	
6 (South of S 3)	Big black storage jar?	0,60	
7	Millstone	0,90	
8	Fire place with round cavity	0,20	1192
9	Millstone	0,20	
10	Millstone	0,20	
11	Red burnt clay cushion	— 0,10	
12	Red burnt clay cushion	— 0,40?	
13	Round bellied carafe with neck	— 0,25	— 0,40
14	Red burnt fire place with round cavity (a = burnt stones, b = cavity)	— 0,40	
15	Fire place with a cavity	— 0,40	
16	Red clay and stones	— 0,30—0,60	
17	Black-on-red painted sherds and bones of ru- minant	— 0,40	
18	Red burnt clay cushion	— 0,40	0,15
19	Red burnt fire place with a cavity	— 0,40	
20	Red burnt earth with admixture of coal	0,15	
31	Clay statuette of animal	1,70	
32	Round vlay vessel		

Other objects from B III: nos. 923 round chipping stone, 924 half chipping stone, 925—928 four flint flakes, 929 bone awl, 930 fragmentary bone pin, 931 whorl or wheel of clay, 932 biconical sling bullet, 980—982 three flint flakes, 994 clay statuette of animal without head, 995 biconical sling bullet, 996 flint flake, 1016—1017 two biconical sling bullets, 1037—1039 three flint flakes, 1040 pointed bone implement, 1041 copper pin with spiral head, 1053 three fragments of copper pin, 1054—1056 three flint flakes, 1057 copper fragment, 1058—1061 four flint flakes, 1071 biconical sling bullet, 1072 flint flake, 1137 flint flake, 1138—1139 two sling bullets, 1143 sling bullet, 1144 miniature vessel, 1145 bone awl, 1146 bone implement, 1447 fragment of copper band, 1154 round notched disc of clay, 1155 copper fragments, 1156 flint flake, 1173 pierced clay disc, 1174—1176 three flint flakes, 1225 bone implement, 1226 sling bullet, 1227 bone implement, 1228—1229 two flint flakes.

To the north of B III 5 a large redbrown clay pot of coarse ware with a short spout.

APPENDIX TO FIG. 78

B II b

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ⁸	Skeleton	4.40	572—573
S ⁸	Fragments of skeleton	ab. 4.50	556—557, 570
S ⁹	Skeleton (legs)	3.90	642, 642 b 756? (452)
S ¹⁰	Fragments of skeleton	2.50	
S ¹¹	Skeleton	3.10	
S ¹²	Skeleton	3.10	755
S ¹³	Skeleton	3.10	
S ¹⁴	Child's skeleton (fragments)	3.00	
S ¹⁵	Skeleton	2.70	759—764
S ¹⁷	Skeleton (fragments)	2.80	765—768
S ¹⁸	Skeleton	2.50	769—771
19	Heap of stones	4.80	
20	Sherds	4.80	
21	Door hinge-stone (mortar?)	3.90	
22	Stone heap	3.90	
23	Two round clay vessels	3.90	637, 638
24	Black storage jar	2.90	709
25 (under 24)	Door hinge-stone	2.90	708
26	Cylindrical alabaster vessel	3.00	710
27	Copper bracelet and bone fragments	3.00	724
28	Biconical vessel	3.30	745
29	Black-on-red painted clay statuette of animal	2.90	731
30?	Clay statuette of animal	3.10	732
43	Whorl of reddish clay		300
81	Door hinge-stone		599

Other objects from B II: nos. 162 black polishing stone, 200 fragments of bronze- or copper sheet, 201 flint flake, 301—302 two flint flakes, 312 ball of limestone (10.15×8.6), 576 grey foot-shaped flat stone with pierced hole, 577 flint flake, 594 copper tack, 609—611 three flint flakes, 612 black-grey bowl, 613 bone chisel, 689 bone point, 690—694 five flint flakes, 725 millstone, 726 a, b, 727 three millstones (one triangular), 728 millstone, 729 white pebble with one polished side, 730 half alabaster mace head, 733 fragm. copper pin, 735 half clay wheel, 736 bone awl, 739—740 two flint flakes, 741 copper awl, 748 black deep bowl with lip, 781 foot-shaped clay object (4 cm), 784 flint flake, 785 sling bullet, 787 head and neck of red clay statuette, of animal, 788 grey clay statuette of animal, 789—790 two biconical sling bullets, 791—793 three flint flakes, 794 nail head or tack of copper, 795 copper pin with round head, 796—806 eleven flint flakes, 807 bone awl, 808 flat round stone disc, 809—811 three biconical sling bullets, 812 red clay statuette of animal, 829 flint flake, 843 small black jar (?), 848 flint flake, 849 half biconical sling bullet, 840 chipping stone of flint, 851 chipping stone of flint, 852—854 three biconical sling bullets, 855 reddish clay bead, 856—865 ten flint flakes, 866 bone awl.

APPENDIX TO FIG. 79

B II a

No. on the plan	Object	Height over the \pm O-point in metres	Inv. no.
S ¹	Fragments of skeleton (alabaster column and black vessels)	5 55—5,80	146—148
S ²	Child's skull	5,80	
S ³	Feet and tibia of skeleton	5,50	
S ⁴	Skeleton	4,95	
S ⁷	Fragments of skeleton	4,60	563—569, 578, 600
S ⁸	Skeleton	4,50	558—562
1.....	Flint flake	5,80	153
2.....	Six copper fragments	5,30	191
3.....	Black miniature vessel	5,10	192
4.....	Millstone (two halves)	5,60	193
5.....	Cylindrical alabaster column	5,00	194
6.....	Millstone	5,00	195
7.....	Fire place	5,10	
8.....	Flint flake	5,10	213
9.....	Clay bird	4,80	215
10	Glass bottom	4,80	214
11	White polishing stone	4,90	216
12	Flint flake	4,90	217
13	Cylindrical limestone bead	4,90	218
14	Small black jug	4,90	219
15	Hard floor	4,95	
16	Stone heap.....	4,90	
17	Hard floor with red burnt clay	5,00	571?
18 a	Clay vessel	4,80	
18 b	Rib of big animal	5,00	

APPENDIX TO FIG. 82

B I—B II a¹

No. on the plan	Object	Height over the \pm O-point in metres.	Inv. no.
S ¹	Fragments of skeleton	5,80	
S ²	Humerus of skeleton	5,85	
S ³	Tibia and foot of human being	6,30	
S ⁴	Skull of man	5,90	
S ⁵	Skull and two small bricks	6,00	
S ⁶	Human tibia	5,60	
S ⁷	Human tibia (standing)	5,60	
S ⁸	Fragments of skeleton	5,75	
S ⁹ a	Ribs of human skeleton	5,70	
S ⁹ b	Skeleton	6,45—6,60	137
S ¹⁰	Skeleton on bed of bricks	7,10	
S ¹¹	Fragments of child's skeleton	6,10	
1	Miniature vessel with two pierced holes	5,95	89
7	Two vessels (spouted bowl and cooking pot) ..	5,35	90—91
9	Two smashed vessels (one cylindrical)	5,60	92
14	Small round vessel	5,40	93
21	Animal's bones	6,20	
22	Small round vessel	6,20	127
23	Egg-shaped vessel with lugs	6,20	136

Other objects from B I: no. 163 flint flakes.

APPENDIX TO FIG. 84

D II—D III

No. on the plan	Object	Height over the \pm O-point in meters	Inv. no.
S ¹	Child's skeleton (fragm.).....	2,30	405, 430
S ²	Child's skeleton (fragm.).....	1,80	475—477, 499
S ³	Skeleton	1,60	
II S ¹	Skeleton (fragm.)	2,70	
II S ²	Skeleton	2,70	
II S ³	Skull	3,60	
1.....	Smashed black-on-red painted vessel	2,20	
2.....	Sherds of black-on-red painted vessel	2,05	
3.....	Flint flake	2,10	432
4.....	Rattle of clay	1,20	454
5.....	Clay statuette of bull	1,80	455
7.....	Skeleton of ruminant	1,50	
8.....	Brick	1,50	
9.....	Turtle shells and bones of animals	1,50	
10	Bricks	1,10	
II 5	Whorl	2,60	378
II 6 (between II' and II ⁸ on plan).....	Cylindrical vase	2,75	353
II 7	Black-on-red painted sherds	2,70	
II 8	Neck of vessel	2,60	
II 10	Black-on-red painted sherds	2,50	
II 11	Flint flake	2,60	389
II 12	Flint flake	2,70	390
II 13	Biconical sling bullet	2,40	391
II 14	Bone implement with incision at the point ...	2,70	392
II 15	Black-on-red painted sherds	2,40	
II 16	Sherds and animal's skeleton	2,70	
II 17	Black-on-red painted sherd	2,30	
II 18	Black-on-red painted sherd	2,70	
II 20	Smashed clay vessel	2,60	

Other objects from D II and D III: nos. 364 eggshaped black clay bead, 385, 386 two flint flakes, 393 flint flake, 394 biconical sling bullet, 429 pierced bone chisel, 431 sling bullet, 451 flat oval stone pendant, 461 fragment of copper bracelet, 462 fragment of copper pin, 466 fragment of clay whorl, 467—468 two flint flakes, 497 round miniature bottle, 511 crucible of clay, 513 two stone beads, 514 five copper fragments, 515 bone implement (chisel?), 516 bone point, 574 half clay statuette of animal.

APPENDIX TO FIG. 87

D I—D II

No. on the plan	Object	Height over the \pm O-point in metres.	Inv. no.
I.....	Small bronze piece	4,90	
2.....	Flint flake	4,80	261
3.....	Shell	4,90	262
4.....	Foot of clay vessel.....	4,80	352
5.....	Spout of clay vessel	4,90	
6.....	Foot of clay vessel.....	4,70	
7.....	Copper coin (?)	4,60	263
8.....	Red flat clay vessel	4,50	
10	Round clay bead	4,70	303
11	Round clay bead	4,70	304
12	Fragmentary big vessel	4,10	
13	Inferior part of biconical vessel	4,10	320
14	Skeleton of animal	3,90	
15	Sherds of black vessel	3,90	
16 a	Clay whorl	4,10	305
16 b	Clay vessel	3,20	
17	Red footed vessel.....	3,50	321
18	Round, ornamented vessel	3,50	322
20	Flint flake	3,30	323
21	Nail head of copper or bronze	3,50	324
22	Black-on-red painted sherd	3,30	
23	Yellowish clay statuette of animal.....	3,40	334
II 1	Smashed clay vessel.....	3,00	
II 2	Five millstones	3,00	406—410
II 3	Fragments of skeleton	2,90	
II 4	Eggshaped clay vessel.....	2,90	352
II 9	Black-on-red-painted sherd	2,70	
II 19 (to the left)	Turtle shell	3,40	
II 19 (to the right)	Millstone	2,80	

Other objects from D I: nos. 203 fragment of copper pin, 350 flint flake, 351 iron nailhead.

BUILDING REMAINS

In the previous chapter on the excavations and the stratigraphy an account has been given of the building remains that were found in different shafts. All the foundation-walls of the houses consisted of hard-packed clay; no sun-dried bricks were observed. Real kiln-burnt brick, on the other hand, occurred in the uppermost Mussulman layer, and the few burnt bricks that were found at a lower level I have looked upon as traces of re-diggings.

House foundations were observed in A II and C II b and a (Fig. 19—21, 27—28). Hard-stamped clay flooring and fire-places with coal and red-burnt clay were found in nearly all the shafts. The excavation was not comprehensive enough to give an idea of the grouping of the rooms and their mutual connections, or of the size of the dwellings, the streets etc. To judge from the available evidence the building material is throughout of the more primitive kind — mudlayers (called *Chineh* by the modern Iranians), that was employed only to a slight extent in Tepé Hissar, where the house-walls, even in the oldest layer (I), were generally built of sun-dried rectangular bricks. In Tepé Hissar the rooms were rectangular or square, while in Shah Tepé possibly polygonal and perhaps even more rounded walls have occurred. In Shah Tepé C II a, as has been mentioned above, a couple of small tunnels about 25 cm. in width have been found. It has not been possible to give any explanation of these. No house-walls were observed in connection with the tunnels. If any such had been found, one would have been inclined to compare them with the «creep-holes» referred to by E. SCHMIDT,¹) that were of very frequent occurrence in Hissar III. The village in Shah Tepé presumably had the same appearance as Tepé Hissar and the prehistoric village on the plain at Persepolis. It belonged to a stationary population that devoted itself chiefly to cattle-breeding, and especially to the breeding of sheep, but that also carried on some agriculture.

THE GRAVES AND THEIR CONTENTS

As a rule, the graves seem to have been dug under the floor of the houses; perhaps also elsewhere, but not in a special cemetery. About 260 skeleton graves were found, a small number of them disturbed. Of 257 skeletons, 176 were prehistoric and 81 Mussulman. Of the Mussulman skeletons about one third belonged to children, of the prehistoric one fourth. The Mussulman skeletons generally lay outstretched on the right side, with the head pointing W. N. W., N. W. or west and the face turned to the south-west, towards Mecca.

¹ E. SCHMIDT, Excavations at Tepe Hissar, pp. 26 and 306: «Such creep-holes, that is, openings close to the bases of the walls and large enough for an adult person to creep through, were quite frequently encountered in the later houses, particularly of stratum III.»

With rare exceptions, the prehistoric skeletons lay contracted on the left or right side. The orientation varied: 53 had the head to the *east* (+2 pointing E. N. E. and E. S. E.; half of these skeletons (27) derived from the bottom layer (III), in which the whole number of graves whose position in relation to the compass was determined amounted to 50 odd), 25 to the *west* (+3 to W. N. W. and W. S. W.), 19 to the *north* (+5 to N. N. W. and 4 to N. N. E.), 13 to the *south* (+1 to S. S. W.), 6 to N. E., 2 to S. E., 8 to S. W., 3 to N. W.; thus almost half of the skeletons were oriented in a more or less easterly direction. The prehistoric skulls that could be measured are dolichocephalic or mesocephalic; the Mussulman skulls, with few mesocephalic exceptions are brachycephalic or even hyperbrachycephalic.¹ Solitary prehistoric skeletons (B III s⁴, F III, s¹⁸, F III s¹⁰, B III s², F II s⁵) lay outstretched on their backs or crouched with face and belly downwards (B III s², F II s⁵, G II s¹², G II s¹⁷). The femora generally formed a right-angle or obtuse angle with the spine, but in some cases they were more markedly inclined upwards as in B II s⁴ and A III s⁸, and in other cases (C II s⁷, G II s¹¹, H II s⁴, H II s⁵) the knees almost touched the tip of the chin, and it seemed as if in this mummy-position the legs must have been bound fast to the body. The arms were very often bent, so that the hands rested under the chin or before the face. Sometimes the skeletons lay with the upper arms to the sides and the forearms bent with the hands over the chest. Frequently, also, the arms were stretched downwards with the hands resting on the abdomen, at the hips or thighs. Sometimes the hands were supported against the knees bent at a right-angle. The two arms were occasionally in different independent positions. In two cases mother and child had been buried together (B III s², C II s²), and in one case two adults, possibly man and wife (G II s¹⁴, ¹⁵).

In the west mound of Tureng Tepé² were found 75 graves, to wit, 28 in the topmost clearly Mussulman layer, the corpses here being stretched out straight with the head pointing west or north-west, further, 45 at the level 102—105, 20 corresponding to layer II b in Shah Tepé, and finally, 2 graves at the level 97—98 (layer III in Shah Tepé). At the middle (and low) level »the dead were buried in the contracted posture, knees drawn up and arms so that the hands came near the face. The bodies lay pointing in every direction; evidently no particular attention was paid to the orientation of the grave.»

E. Schmidt has with great accuracy marked out the position of the skeletons found in Tepé Hissar, and has drawn therefrom certain conclusions, as to whose value one may feel rather dubious.³ During the oldest period (Hissar I A—C and the larger part of II A) the skeletons were predominantly oriented with the

¹ CARL FÜRST, The Skeletal Material Collected during the Excavations of Dr. T. J. ARNE in Shah Tepé at Astrabad-Gorgan in Iran (Report from the scientific expedition to the north-western provinces of China under the leadership of Dr Sven Hedin, No. 9).

² WULSIN, Excavations at Tureng Tepe, pp. 7 et seq.

³ E. SCHMIDT, Excavations at Tepé Hissar, pp. 62 et seq. 123 et. seq., 232 et seq.

heads to the north-west and south-west. From the end of period II A (Hissar II B and III A—C) it is not possible to observe such a definite orientation. The corpses were placed rather uniformly in all possible directions. »The burial rules altered at the end of Hissar II A, showing a change of behaviour toward the dead, and going a step further, suggesting a change of cult.»

The orientation of Shah Tepé skeletons agrees on the whole with that of the younger group in Tepé Hissar, and in the older skeletongroup in Shah Tepé (period III) one may even observe a tendency contrary to that of the older group in Tepé Hissar (I—II A), half the number being oriented with the head to the east.

Also in Tepé Hissar the skeletons lay as a rule in the contracted position. The same was the case in Tepé Sialk I—IV,¹ where the orientation also varied, but during period I was generally east-west. During periods I and II the skeletons and during the older part of period III the crania were covered with red ochre, something that is especially well-known from Russia.

In Tepé Giyan² were found the same kind of graves as in Shah Tepé, but in addition child-skeletons buried in large clay vessels. »Dans les sépultures d'adultes, le mort est déposé dans la tombe, à même la terre, presque toujours sur son côté, tantôt droit, tantôt gauche, le corps replié non dans la flexion forcée (position embryonnaire) mais dans la flexion relâchée (position dite en «chien de fusil»), et sans aucun souci de l'orientation.» It is possible that the corpse of a newborn child or embryo was deposited in a big vessel in Shah Tepé F III (p. 60).

The »grave-yard» that was found outside the earth-mound that surrounded the oldest town in Susa is described by J. DE MORGAN as follows:³ »Les sépultures sont très voisines les unes des autres; superposées et placées sans ordre, elles occupent une couche d'environ 3 mètres d'épaisseur. Les corps avaient été placés dans une position quelconque, le plus souvent allongés, sans orientation spéciale. Près de la tête se trouve tout le mobilier consistant en vases, armes, instruments et objets de parures.» The northern (older) mound at Anau, that attained a height of about 40 feet, showed, at a height of +28 and +30 feet, in terrace I, skeletons in a crouching position, and in terrace IV similar skeletons of children already at a height of +36 feet. Also deep down in this kurgan lay skeletons in the crouching position; in certain cases evidently within their dwellings. The southern and younger kurgan contained also a number of crouching (child-)skeletons at a level varying between +27 and +23 feet. »Terrace C presents us with a skeleton grave to confirm the rule that the dead were buried near the hearth.» Also in the north Kurgan »they had the remarkable custom of burying their children inside of their dwellings, immediately adjoining their hearths.»⁴

¹ GHIRSHMAN, Fouilles de Sialk I, 1938.

² CONTENAU & GHIRSHMAN, Fouilles du Tépé-Giyan, p. 12.

³ DE MORGAN, Mémoires de la délégation en Perse XIII, p. 7.

⁴ H. SCHMIDT, The Archaeological Excavations in Anau, passim.

Skeletons in the crouching position occur in simple earthen graves in Mohenjo Daro and Harappa in the Indus Valley, and we also know them from the late neolithic culture in China, where a similar grave, containing a crouching skeleton, a couple of stone-axes and a dozen clay vessels, has been excavated by Professor J. G. ANDERSSON at Pien Ch'ia Kou in the province of Kansu, 1400 m. east of Pan Chan.¹

In both northern and southern Mesopotamia earth-graves with skeletons in the crouching position are fairly common from various older periods (e. g. in Tépé Gawra XVIII and VIII, Arpachiya, where corpses during Uruk-time were often oriented west-east, Ur, with typical contracted skeletons during Jemdet Nasr-time without definite orientation). But also skeletons stretched out straight on their backs have been found (Ur, Gawra XVII).

During the Uruk period the burial of corpses in large clay vessels began (Nineveh, Carchemish), and the use of such burial vessels spread also to Susa and the Nehavand district. In Mesopotamia we find also at an early date graves built of clay-bricks, stone or stamped clay; this mode of burial was introduced as well in Susa. During the Lagash-period people began to build graves with vaults or to manufacture coffins for the dead.²

Simple earth-graves with contracted skeletons are also known from Asia Minor and Syria, as also from pre-dynastic Egypt and from many parts of Europe in the stone age period; this mode of burial is evidently very old, wide-spread and not confined to any one people or race, although it was very common during the copper age. In Iran this method of burial is the oldest known and the most wide-spread. Later kinds of graves seem to have been introduced into the country through western influences.

In Shah Tépé it was observed in a few cases that the skeletons lay close by old hearths and, especially as regards a number of infant skeletons, on hard stamped floor containing lime concretion (G II s⁶, s⁷, s¹¹, G III s³). One child's skeleton (G II s⁷) had been laid on red-burnt earth, under which the next layer was some charcoal and thereafter the stamped floor of lime and clay. In such cases the body seems not to have been buried down but allowed to lie on the floor, but covered over perhaps with a new earth floor which was in use for so short a time that it could not now be observed. In the child's grave G III s² there was a layer of charcoal 2—3 cm. in thickness over the skeleton and 15 cm. higher up another, but thinner layer. In this case I presume the body has been buried down under the floor.

In general, and especially in the inner parts of the tepé, the graves were unda-

¹ N. PALMGREN, *Kansu Mortuary Urns of the Pan Shan and Ma Chang Groups* (Paleontologia Sinica, Ser. D, Vol. III, fasc. 1, 1934).

² V. CHRISTIAN, *Altertumskunde des Zweistromlandes*, I, pp. 101, 110, 119, 128, 145, 163, 167, 182, 183, 262, 268, 303, 334, 364, 365.

maged, but there were certain departures from the regular burial. The accumulation of skeletons in layer F III (F III s³—⁷) that has been described elsewhere (page 138) may be interpreted in several ways. Although the bodies were mutilated, it is evident that on burial they were partly decomposed but still more or less 'hanging together'. I thought at first that we were here confronted with a ritual human sacrifice (or punishment), that was carried out together with animal sacrifices — there were plenty of femora as well as bones of swine and goats — and it is conceivable that the bodies had been hung up and had partly decayed before they were buried in the earth. But the presence of clay-vessel fragments of a number of different types, lying in rather concentrated heaps, does not speak directly in favour of the correctness of this interpretation. Possibly an accident — a fire, a falling house, an earthquake — took place, killing a number of people and animals and smashing earthenware, after which everything was tumbled together in one place. Or else a general clearance had to be made in a certain place and a number of half decayed corpses were taken out of their graves and transferred to one spot together with a lot of other rubbish.

Such mass-burials also have been found in Tepé Hissar III B. »In the north east corner of Plot DG 00 the remains of ten persons were found within a small area. Most bones of the skeletons were disturbed and mixed up, but quite a few sections of vertebral columns, arms or legs, pelvic bones and femora, were still articulated. There is hardly a doubt, that these persons had been disposed of in a communal pit, not immediately, but prior to total decomposition. I Plot DG 96 the remains of twelve persons were found under the same conditions.¹ Dr. SCHMIDT at first interpreted the massburials as the results of a severe epidemic that struck the last community, wiping out a large number of people. »However» he now says, »our former conclusions concerning the end of Hissar III were wrong, because we had not yet separated Hissar III B and III C. The mass burials belong to Hissar III B, the settlement of which was, in part at least, actually destroyed by fire and sword.»²)

The body was buried together with vessels of clay and alabaster in large and small numbers, ornaments of copper, beads of various kinds of stone, copper, faience and glass, occasional ornaments and implements of bone and stone, but scarcely any weapons. Those of the latter that were found lay outside the graves.

Not all the graves contained such objects; but on the other hand a total of up to 10 vessels were sometimes found in one grave. Two or three, however, was the usual number.

It is comparatively rare to find whole animals or steaks in the graves. It has been pointed out that the skeletons of sheep and bones of goats have been found

¹ E. SCHMIDT, Tepe Hissar excavations 1931, p. 440.

² E. SCHMIDT, Excavations etc. p. 313.

in the mass-grave F III s³—⁷. Bones of animals have otherwise been found — with one exception — only in the graves of layer II, to wit, in G III s⁴ (*Cervus dama*), A II s³, B II s⁸ (*Sus palustris*, *Ovis aries*), C II s² (*Ovis aries*), C II s⁸ *Capra hircus*, *Sus palustris*, *Ovis aries*), E II s³, G II s² (*Hystrix*, *Equus caballus*, *Capra hircus*), G II s⁹ (*Ovis aries*).¹

LIST OF BURIALS

Graves in A I

Skeletons 1—3 were without finds, but behind the heels of skeleton 2 and before skeleton 3 were found necks of *large red vases* (Pl. VIII, Fig. 90, nos. 8, 9). On the right side N. W.—S. E. Skeleton 2 was best preserved (phot.).

Skeleton 4 with a *bone awl*, probably of older date (?). About 1.60 m. in length. Lay on the right side N. N. W.—S. S. E. (Pl. VIII, Fig. 91).

Skeleton 5, about 1.74 m. in length. Lying on the right side, partly on the back.

Skeleton 6, stretched out on the right side N. W.—S. E. (Child).

Graves in A II

Skeleton 1. *Child's skeleton*, lying with head towards the south at +4.60 m.

Skeleton 2. *Child's skeleton*, head towards the south, legs pointing northwards. Height +4.60 m. On the west (left) side of the head was found a *globular spouted jug*.

Skeleton 3. *Skeleton* lying crouched on the left side with head pointing west and legs to the east. Knees slightly bent. Height +4.35 m. (Phot.).

Skeleton 4. Remains of a *skeleton*, oriented N.—S. *Three clay vessels* were standing on the skeleton below the neck. These were: a relatively deep bowl, a small biconical vessel and a pot with neck and spout. Height: +4.10 m. (Pl. VIII, Fig. 92). This grave also contained a little *miniature axe-head or mattock of copper*.

Skeleton 5. Remains of a *skeleton's* head pointing south. On the lower part of the skeleton's trunk stood 2 *globular jugs with spouts* and an *alabaster vase*. A num-

ber of *alabaster beads* were also found here. Height: +4 m. (Phot.).

Skeleton 6. Poorly preserved *child's skeleton*, lying crouched S.—N. on the right side and with the face to the east. Height: +3.10 m. At the back of the skeleton lay *three globular spouted jugs* of black earthenware. Two of these are handled. (Phot.).

Skeleton 7. At a level of +2.10 m. was found a rather decayed *skeleton* in a crouching position and with slightly bent knees. The skeleton lay on the right side with the head towards the west and the legs pointing east.

Skeleton 8. At a level of +1.25 m. was found a *skeleton* crouching on the right side. Head pointing east, legs to the west. The legs were drawn up so that the knees formed an acute angle. (Pl. VIII, Fig. 93). Behind the cranium was a curved, egg-shaped — *globular bottle*.

Skeleton 9. *Child's skeleton* in the crouching position on the left side. Head pointing W. N. W. and feet E. S. E. Height +1.5 m. Poorly preserved. A number of *fragments of clay vessels* (one biconical jar with open trough-shaped spout) were found with this skeleton, together with a small low cylindrical *bead of white limestone* (?) (Phot.).

Skeleton 10. Remains of a *human skeleton*. Close to the same a *square stone* having in the middle a round hollow 7 cm. in diameter. Size: 13.5 × 12.2 × 6.9 cm. Found at +1.5 m.

Skeleton 11. Remains of *human skeleton* at +1.45 m.

Skeleton 12. *Skeleton* in the crouching position and on the left side. Head towards the west, feet to the east. The arms were

¹ J. W. AMSCHLER, *Tierreste* etc., Table, p. 54.

so bent that the hands were just under the chin. Height: +1.10 m. Around the head of this skeleton lay 5 clay vessels. (Phot).

Skeleton 13. At +0.95 m. was found a badly damaged skeleton lying N. W.—S. E. Position of the head uncertain but probably to the west. To the west of the skeleton were two clay vessels, one of them biconical, intact, the other smashed.

Graves in A III

Skeleton 1. Child's skeleton in crouching position, lying on right side with head towards the south. Height +0.60 m.

Skeleton 2. Skeleton of adult, lying on the left side with head to the east and legs pointing west. The right thigh almost formed an right angle with the body. Height: +0.60 m. Two clay vessels below the feet. (Phot.).

Skeleton 3. Skeleton at —0.60 m. lying in the crouching position on the left side with bent knees. Head to the north, feet to the south. Above the head lay three clay vessels, of which two are black and one red with black painting. The black cup lay over the mouth of the large vessel.

Skeleton 3 a. At the feet of skeleton 3 lay the remains of another skeleton, probably a child skeleton, oriented E.—W.

Skeleton 4. In damp clay at —0.70 m. lay a badly decayed skeleton in the crouching position. Head S. W. and legs N. E. The skeleton lay on the left side. Here and there were to be seen pieces of coal, and some bones showed signs of charring. Behind and above the head lay eight clay vessels, while fragments of a couple of broken vessels were found under the skeleton. On the breast and under the head lay two small copper rivets. The largest jars, e. and g., were covered by the two semi-round cups f. and h.

Skeleton 5. Upper part of a skeleton lying (crouched?) S. W.—N. E. with head pointing S. W. Probably on the right side. Further up, to the N. E., lay the lower part of a skeleton, possibly belonging to the same body (Pl. IX, Fig. 94). The upper part at —0.60, the lower part at —0.50 m. On the thorax of the skeleton were a number of broken potsherds, while close by stood a round bellied clay jar.

Skeleton 6 a. Skeleton lying on the right side in the direction W.—E. and facing south. The arms were bent so that the hands lay

before the face. Before the head were two clay vessels a low bowl and a bellied jar, both knobbed. The skeleton lay at —0.65 m.

Skeleton 6 b. In the south-eastern corner of the shaft, at +0.80 m. lay the remains of a skeleton in the crouching position, with the head to the south-east (Pl. IX, Fig. 95). The lower part of this skeleton was largely missing. The skeleton lay on the right side. On the head lay an egg-shaped, curved bottle, while before the upper part of the face lay another, slightly squat, carinated bottle. (Photo).

Graves in B I

Skeleton 1. Only the cranium of a human being (+5.80 m.).

Skeleton 2. Humerus of a human being (+5.87 m.).

Skeleton 3. Tibia and foot of human being (+6.30 m.).

Skeleton 4. Cranium and some other parts of human skeleton (+5.90 m.).

Skeleton 5. Skull of human being flanked by two small bricks at the same height (+6.00 m.).

Skeleton 6. Human tibia (+5.60 m.).

Skeleton 7. Human tibia, found in vertical position (+5.60 m.).

Skeleton 8. Shoulder-blade and sternum of human being (+5.74 m.).

Skeleton 9 a. Ribs and other human bones (+5.70 m.).

Skeleton 9 b. Skeleton in the crouching position, lying on the left side, with head pointing north. At the feet and behind the vertebrae were fragments of badly burnt light red earthenware (cooking utensils) and of black earthenware. The cranium lay at a height of +6.45 m. (Pl. IX, Fig. 96). It is probable that all these skeleton remains really belonged to horizon II a. In all likelihood the only skeletons belonging to Stratum I (the Mussulman horizon) were:

Skeleton 10. Skeleton with head lying on the right side. This skeleton was stretched out at full length and was oriented N. W.—S. E. Under the skeleton was a bed of bricks. Height: 7.10 m.

Skeleton 11. Very fragmentary skeleton with head pointing west. Stretched out full length: +6.10 m.

The two last-mentioned skeletons were without doubt Mussulman.

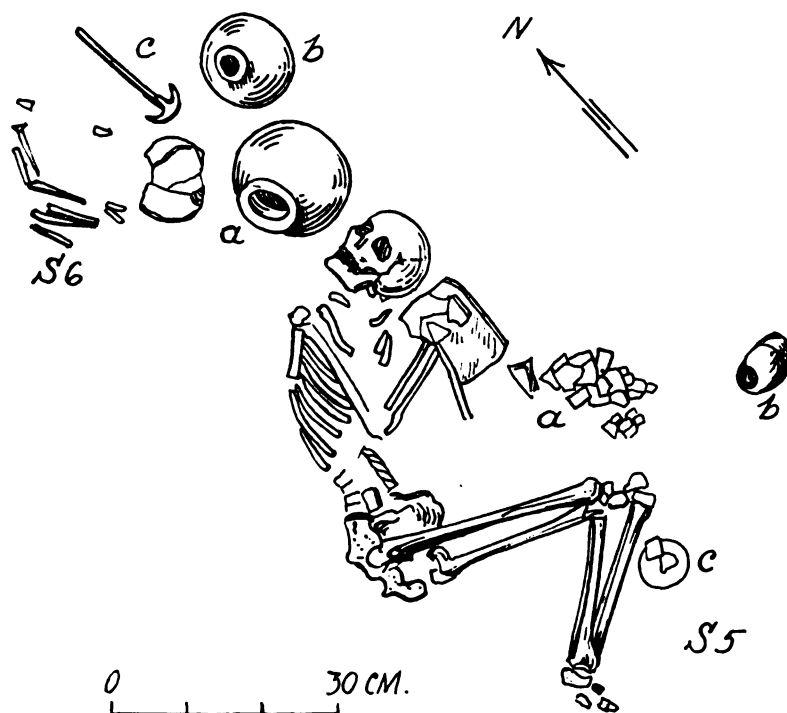


Fig. 97 a and 98 a

Graves in B II

Skeleton 1. In the south wall was a *skeleton* with the head pointing south. The head and the main part of the body lay actually in the south wall. Only the tibia and the fibula were accessible. Near these lay a piece of an *alabaster column*, a relatively intact *clay vessel* and fragments of a similar one. Height: +5.80 m.

Skeleton 2. Child's *skull*. Badly decayed. Height: 5.80 m.

Skeleton 3. Decayed parts of right and left feet, fibula and tibia of a *skeleton*. Height 5.50 m.

Skeleton 4. *Skeleton* in the crouching position, lying on the left side with head towards the east and legs pointing west. Height: 4.95 m. East of the cranium an old fire-place (Pl. VII, Fig. 80).

Skeleton 5. *Skeleton* in the crouching position, lying on the left side and oriented north — south. The upper part of the body rather twisted over on the back; face looking upwards. Before the head a *clay vessel*, two more further away from the head and one before the knees. Height: +4.40 m. (Pl. IX, Fig. 97 and 97 a).

Skeleton 6. In the north wall and n. e. of skeleton 5 was found a *skeleton* in the crouching position and with the head to the south-west (south). The skeleton lay on the right side facing east. Height: 4.30 m. Before the face lay a *copper pin* (c); south and south-east of the cranium were two *clay vessels* (a, b). Height ca 4.45 m. (Pl. IX, Fig. 98 and 98 a).

Skeleton 7. At a height of +4.60 m. lay a badly decayed *skeleton* in the crouching position. Head pointing west, feet to the east. Along the whole length of the skeleton were found *five clay vessels* and an *alabaster vase*, some standing, others lying (Pl. IX and X, Fig. 99 a, b). Near the head were a *copper pin* and *four beads*. Further down, near the hips and, close to one of the arms, a *flint-flake*.

Skeleton 8. At a height of +4.50 m. was a *skeleton* in the crouching position, lying on the left side with the head pointing south and the legs to the north. Together with this skeleton were found *five clay vessels*, of which three stood at the feet, one near the crown of the head and one under the chin (Pl. X, Fig. 100).

- Skeleton 9.* *Skeleton* in the crouching position, only the legs preserved. Height +3.90 m.. Seems to have lain on the left side with the head to the east and the legs to the west. Behind the feet were *two clay vessels*, one being biconical with a little flat lid, while the other was egg-shaped. (Pl. X, Fig. 101).
- Skeleton 10.* *Skeleton* in the crouching position at a height of 4.30 m. Legs to the north, head to the south. Advanced stage of decay.
- Skeleton 11.* *Skeleton* lying on the left side with the head at the side in front of the arms N. N. W.—S. S. E. The left thigh was stretched out at a right angle from the hip; knee much bent. The right leg was more slightly bent, so that the knee was resting rather higher than the left foot, actually on the ankle. The leg from knee downwards stretched out to the north. The arms are bent and held out with closed hands. The cranium lies before the arms with the crown upwards. Height +3.10 m.
- Skeleton 12.* *Skeleton* in the crouching position, lying on the left side with the head towards the east and the legs pointing north-west. Above the crown of the head was a *clay vessel (biconical)*, before the knees (more to the south, near the hips) *another vessel*, broken. Height +3.10 m. Behind the thigh-bones a couple of fragments of *black and red earthenware* (Phot.).
- Skeleton 13.* *Skeleton* in the crouching position with head pointing west and legs to the east, lying on the left side. Knees drawn up to the hips, face to the north. Arms somewhat bent, hands under the thigh-bones. *No finds.* (Height +3.10 m.).
- Skeleton 14.* A little *child's skeleton* in the south wall with head to the south-west and legs north-east. (Height 3.0 m.).
- Skeleton 15.* Near the north wall a *skeleton* in the crouching position with the head pointing N. N. E. and legs S. S. W. (Pl. X, Fig. 102). Behind the head *two clay vessels*, a bellied jar and a hemispherical bowl, one on top of the other. In addition was found a *copper fragment of a ring*. (Height +2.80 m.). Immediately to the north of and half underneath this *skeleton* lay *another* in the same direction (B III-character).
- Skeleton 16.* At a height of +2.70 m. lay a *skeleton* in the crouching position and on the left side. Head S. S. W. and feet N. N. E. The lower part of the legs formed rather more than a right angle with the thigh-bones. The arms were bent, with the hands before the face (Pl. X, Fig. 103). On and above the head of the skeleton were *six clay vessels* (Nos. 759—764).
- Skeleton 17.* Partly immured in the west wall lay a *skeleton* in the crouching position with the head to the west and legs pointing east. Beside the legs (to the east) lay *two clay vessels*, one egg-shaped and the other cylindrical, adjacent to each other. Near the knees were *two more*, one egg-shaped, the other biconical. (Height +2.80 m.).
- Skeleton 18.* At +2.50 m. in the south wall lay a *skeleton* with the head pointing east and the legs west. The skeleton was in the crouching position and on the left side, with the face towards the south. On the skull lay a *globular light grey vase* with two lugs, rather askew. Before the hips were *three clay vessels*, of which one was a large round vase with high neck (lying), one standing upright with short neck (broken) and a small vase (lying). At the feet of the skeleton was found *another vase*. An extra lug was also found (Pl. X, Fig. 104).
- Skeleton 19.* At 2.70 m. lay a *skeleton* in the crouching position, probably on the left side, with the head pointing north and the feet south. Near the head in front of the face were found *two clay vessels* (nos. 772—773), to wit, a bellied jar and a hemispherical bowl (B III-character).
- Skeleton 20.* *Skeleton* in the crouching position at +2.50 m. The skeleton was lying on the left side with the head pointing E. N. E. and the legs W. S. W. The legs were bent, so that the thighs formed an obtuse angle with the trunk and the knees an acute angle with the thighs. To the east of the crown of the head was a *black jar with high neck*, while adjacent to this was a *black, broken hemispherical bowl*. Before the knees were *two other clay vessels* (jar and bowl). (nos. 825—828). (B III-character).
- Skeleton 21.* In the north wall was found a *skeleton* in the crouching position at +2.60 m. The skeleton lay presumably with the head to the west and the legs to the east, and belonged to a *child*. To the east of the corpse lay *two clay vessels* (a bellied jar and a hemispherical bowl), one covered by the other (nos. 774—775). (B III-character).
- Skeleton 22.* Just to the east of skeleton 19 lay a *child's skeleton* in the crouching posi-

tion and on the right side. The head pointed east and the legs west. The skeleton was found at a level of +2.60 m. No finds.

Graves in B III

Skeleton 1. Skeleton in the crouching position at +1.80 m.; lying on the right side with the head pointing N. N. E. and legs S. S. W. The arms were bent and stretched before the face. (Phot.)

Skeleton 2. Two skeletons of mother and child, the latter lying behind the back of the former at +1.40 m. The skeleton of the mother was lying crouched on the belly with the head pointing east and the legs pointing west. The child-skeleton lay with the cranium near that of the mother but with the legs very slightly bent, almost stretched out straight. The knees of the adult skeleton were bent; the feet were rather higher. The left upper arm was stretched out; the head lay on the right side with the face towards the west. The legs were bent almost at a right angle (Pl. XI, Fig. 105). The child seemed also to be lying on its belly.

Skeleton 3. Near the south wall at +1.20 m. lay a skeleton in the crouching position and on the left side; the head was towards the east and the legs to the west; the face to the south. The skull of this skeleton was crushed. Above the head to the south-west were three clay vessels. The legs were doubled up, the thighs forming a right-angle with the hips. The fore-arms were lifted up to the face. The vessels were two hemispherical bowls and one bellied jar (Pl. XI, Fig. 106).

Skeleton 4. At +1.40 m. was found a long (approx. 1.90 m.) skeleton lying stretched out on the back with the cranium to the south and legs to the north. Hands and arms were missing.

Skeleton 5. Parts of a skeleton, probably of a skeleton in the crouching position; legs preserved. Height +0.10 m.

Skeleton 6. Skeleton in the crouching position, lying on the left side with hands over the face. Head to the east, legs to the west. Height —0.00 m. (Pl. XI, Fig. 107).

Skeleton 7. Child's skeleton in the crouching position, lying on the left side with head pointing east and legs west. Face to the north. Height +2.90 m. The grave virtually belongs to B II.

Graves in C I

Skeleton 1. Cranium and cervical vertebrae of skeleton lying N. W.—S. E. on the right side. Height +7.0 m.

Skeleton 2. Cranium and fragments of skeleton lying N. W.—S. E. on the right side. Height +7.40 m.

Skeleton 3. Cranium and fragments of skeleton lying N. W.—S. E. on the right side. Height +6.90 m.

Skeleton 4. Skeleton lying stretched out on the right side and disposed N. W.—S. E. Height +6.90 m. (Pl. XI, Fig. 108).

106 (a) Behind the knees lay a small stone, on which were pieces of glass and of iron. Height +6.70 m.

113 (b) Behind the skeleton — approx. 2/3 m. — lay a red-burnt lid of clay that had been turned on a wheel and was surrounded by a rope motif in relief, 4.25 cm. above the edge. In the centre was a double handle. Ornamented with carved lines, forming triangles and spray patterns. Fragmentary. Height +6.90 m. Diam. 26.7 cm. Height approx. 7.0 cm.

— The lower jaw of a camel was found a little farther to the east. Height +6.10 m.

Skeleton 5. Skeleton lying on the right side and stretched out in the direction N. W.—S. E. Height +6.85 m.

112 (a) 3/4 m. to the north of the skeleton's head, at +6.70 m., lay a dark redcoloured clay vessel. The bottom was missing. The vessel has a vertical handle and shows traces of soot. Ornamented below the neck with a zone of carved crossed lines and above them with an X. Diam. 15.85 cm.

Present height 19.8

Skeleton 6. Child's skeleton lying on the right side in the direction W. N. W.—E. S. E. Height +7.0 m.

Skeleton 7. Long skeleton lying on the right side, N. W.—S. E. Height +6.7 m.

Skeleton 8. Cranium and a number of vertebrae of a skeleton lying on the right side in the direction N. W.—S. E. Height +6.90 m.

114 (a) To the south of the skull, at about 3/4 m., lay half of the neck of a large, handled clay vessel, red in colour and wellburnt. Ornament-

ed below the neck with a wreath of small radiating lines. Height +6.90 m.
Height of fragment 16 cm.
Diam. of mouth 9 »

Skeleton 9. *Skeleton* lying on the right side in the direction N. W.—S. E. Stretched out full length. Height +6.8 m. Near the skeleton lay a *millstone*; but it is uncertain whether it originally belonged to the grave or 'migrated' from the prehistoric layer in the course of excavation.

115 (a) A large *millstone*, almost rectangular, with two flat sides.

Length 32.0 cm.

Breadth 17.1 »

Thickness 4.6 »

Skeleton 10. *Child's skeleton* lying on the right side in the direction W. N. W.—E. S. E. Height +7.10 m.

Skeleton 11. Upper part of *skeleton* lying on the right side and disposed N. W.—S. E. Height +7.0 m.

Skeleton 12. *Child's skeleton* lying on the right side and disposed N. W.—S. E. Height +7.05 m.

Skeleton 13. *Skeleton* lying on the right side. W. N. W.—E. S. E. Height +7.0 m.

Skeleton 14. *Child's skeleton* on the right side; disposed N. W.—S. E. Height +7.10 m.

Skeleton 15. Long *skeleton* resting on the right side. Legs stretched out. Disposed N. W.—S. E. Height +6.80 m.

Skeleton 16. *Skull* of *skeleton* lying N. W.—S. E. Height +7.0 m.

Skeleton 17. *Skull* of *skeleton* (child?) lying on the left side in the direction N. W.—S. E. Height +6.70 m.

Skeleton 18. *Skeleton* lying N. W.—S. E. on the right side. Height +6.60 m.

Skeleton 19. Long *skeleton* lying W. N. W.—E. S. E. at +6.70 m.

Skeleton 20. *Skeleton* with slightly bent knees; lying on the right side in the direction W. N. W.—E. S. E. Height +6.75 m.

Skeleton 21. *Skull* and other fragments of *skeleton* lying in the east wall. The skeleton was on the right side and disposed N. W.—S. E. Height +6.85 m.

Skeleton 22. *Skull* of *skeleton* lying on the right side in the direction N. W.—S. E. Height +6.70 m.

Skeleton 23. Probably the *head* of an *animal*.

Skeleton 24. *Skeleton* near the north wall, lying on the right side in the direction N. W.—S. E. Height +7.0 m.

Skeleton 25. *Cranium*, lying near 22, in the direction N. W.—S. E., on the right side. Height +6.40 m.

Skeleton 26. *Skeleton* in the direction N. W.—S. E. (more so than the others, which tend more towards the west) on the right side. Height +6.20 m.

Graves in C II

Skeleton 1. Fragmentary *skeleton*, probably in the crouching position, although the legs are not preserved. Head in southern direction; skeleton probably lying on the right side. Height +5.80 m. (Phot.).

Skeleton 2. In the south-east corner of the shaft, at +6.15—6.30 m. (1.80 m. below the surface), lay a *female skeleton* in the crouching position. Near the breast of the latter was a little *child-skeleton* (Pl. XI, Fig. 109). The woman lay on the left side with the head towards the north and face to the east. Head crushed. Right arm bent, so that the hand rested in front of the face. Near the head stood three *black clay vessels* (partly behind the head, partly before the face). Over the head was a little *copper pin*; between the body and upper arm (to the east) a long *bronze pin*, the head of which was pointing to the feet (south). Above the head were strewn a large number of *faience beads* and a *glass bead*. At the feet stood a *clay vessel* (intact), surrounded by fragments of one or several others. A little piece of *copper* was found below these jars. Belonging to the adult skeleton were also two *biconical clay beads*, one of them near the ear on the neck of the middle vessel. Between the vessels a and b and also in vessel b lay 7 + 5 *astragali* of *sheep*. A *flint-flake* was found at the foot of the large skeleton. The child, that appeared to be but newly born, lay N.—S. 4 to 5 *glass beads* were found near its neck. The *jaw-bone* of an *animal* lay at the foot of the adult skeleton. (Drawing, Fig. 110).

Skeleton 3 a. At +5.10 m. was found a *skeleton* in the crouching position and on the left side. The head pointed to the east and the legs to the west. A black *pot-shoulder* was found among the ribs. (Phot.).

Skeleton 3 b. *Skeleton*, of which only the head was accessible, in the south-east corner of the shaft. Probably in the direction W.—E., +4.60 m. (Pl. XI, Fig. 111). Near the head was a *cylindrical clay vessel* of black-grey earthenware, ornamented with a net-

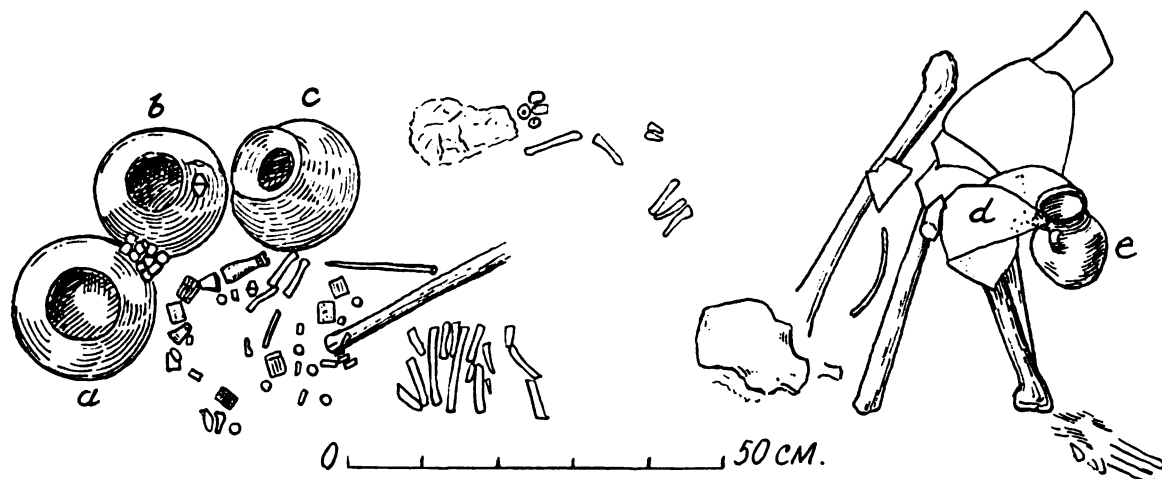


Fig. 110

work and coarse zig-zag lines in six zones, and on the outside of the bottom ornamented with overlapping egg-shaped circles.

Skeleton 4. Child's skeleton in the crouching position, lying on the left side with head N. N. E. and feet S. S. W. Height + 3 m.

Skeleton 5. Child's skeleton in the crouching position and on the left side; head towards the east and legs to the west. Height + 3.0 m.

Skeleton 6. Skeleton in the crouching position. Knees and arms much bent, with hands under the belly. The skeleton was lying on the right side, with head to the south and feet to the north. Height + 2.75 m. Before the head of the skeleton was a clay vessel; behind the same two more. (Pl. XII, Fig. 112).

Skeleton 7. At a height of 2.75 m., near the middle of the south wall (Fig. 29) lay an extremely well-preserved skeleton in the crouching position. The skeleton lay on the left side, with the head pointing east and the legs pointing west. The legs were drawn up against the chest. The face was towards the south. Below the feet lay or stood 3 clay vessels. (Pl. XII, Fig. 113 and 113 a).

Skeleton 8. Skeleton just to the north of skeleton 6, at a height of + 2.75 m. or slightly more. The skeleton lay on the right side and in the crouching position. Direction N. N. E.—S. S. W. The hands were on the belly region and the legs much bent at the knees, so that the knees were 0.25 m. higher than the pelvis and thighs. Under the right tibia stood a cylindrical clay

vessel, while another, egg-shaped vessel was farther in, under the right knee. The skeleton lay half on the back, somewhat on the right side (Pl. XII, Fig. 114). Behind and to the north of the head of this skeleton was found a partially preserved skeleton of a sheep.

Skeleton 9. Near the south wall was a child's skeleton in the crouching position, head pointing east, legs pointing west; lying on the right side. Height + 3.0 m. No finds.

Skeleton 10. While skeletons 6 and 8 lay on the remains of a clay wall, skeleton 10 was found under and to the west of this wall at + 2.10 m. (Pl. XII, Fig. 114, to the left). This strongly built male skeleton was disposed N. N. W.—S. S. E. in the crouching position and with the upper part of the body on the back, inclining somewhat to the right. The skeleton thus lay partly on the right side with the thigh-bones forming a right-angle with the trunk. The arms were bent, the left arm in such a way that the hand rested under the neck; the right arm lay over the breast. Near the head were found two clay vessels, a deep bowl and a biconical jar (Pl. XII, Fig. 115).

Skeleton 11. At + 1.60 m., to the west, lay a skeleton in the direction east-west. This skeleton, which was found on the uncovered remains of a wall, lay on the back, probably with flexed knees. The arms seem to have been so disposed that the upper arms were close to the sides while the fore-arms were crossed over the body. Near the head were found fragments of a deep bowl.

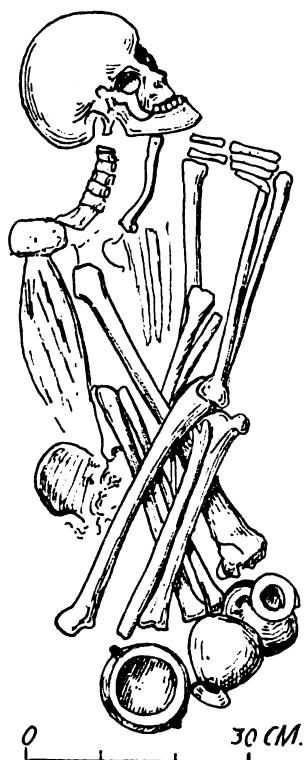


Fig. 113 a

Skeleton 12. In the east wall was found a skeleton at +2.40 m. The head pointed west and the legs to the east. The skeleton lay in the crouching position, probably on the left side. On the middle of the spine lay a cylindrical vase with spout and near the north side of the head were two other vases, one of which was rounded biconical with lugs while the other was egg-shaped. (Pl. XII, Fig. 116).

Skeleton 13. On the plans are to be found two skeletons No. 13, both near the south wall. One of these (13 a) belongs to a child. It lay crouched on the right side with the head to the east and the legs to the west. No finds. The other skeleton lay farther in the south wall, with the head pointing east and the feet pointing west. The skeleton was lying in the crouching position on the left side. Height +2.40 m. The arms were bent upwards. Before the arms was a small almost globular vessel (c) with lugs, while on and behind the legs below the knees were two more vessels, to wit, an egg-shaped vessel and a larger one with lugs (a and b). (Phot.).

Skeleton 16. Near the west wall was a skeleton in the crouching position, lying on the left side. The head pointed east and the legs to the west. Height +1.6 m. At the head stood three vases, a, b, c, while a fourth biconical (d) was found at the feet.

Skeleton 17. At +1.60 m. near the west wall lay a skeleton in the crouching position but on the back; the drawn up knees were inclined to the right (north). Orientation: east — west. Close to the south side of the skeleton, below and behind the head, were four clay vessels (to the left of the head). In grave 17 were also found a flint-flake and a couple of red vase-fragments, which had possibly slipped in by accident in the course of the excavation.

Skeleton 18. Skeleton in the crouching position at +2.0 m. It was lying on the right side with the head to the east and the legs to the west; face towards the north.

Skeleton 19. At +1.3 m., to the west of skeleton-grave 18, was a skeleton in the crouching position, lying on the left side with drawn up knees. Near the skeleton stood four vases, two egg-shaped, one cylindrical and one crushed, probably globular or egg-shaped. The last one was smaller than the others. The cranium lay partly in the cylindrical vessel; the other vessels were to the north of the latter, behind and above the nape of the neck. (Pl. XII, Fig. 117).

Graves in C II (C III)

Skeleton 14. At a height of +1.0 m. in the south-east corner was found a skeleton lying crouched up on the right side and disposed in a north-southerly direction. The skeleton was badly decayed, owing to the dampness of the earth. Near the cranium was a white stone, and at the nape of the neck two black clay vessels (a bowl and a bellied jar), one of them as a lid on top of the other. At the feet was a black little jar. Behind the hips was found a segment of a clay cylinder (red earthenware), probably a cooking utensil or something of that kind. The earthenware had a considerable admixture of grit and had begun to crumble. The clay cylinder was so damaged in course of removal from the grave that nothing remained for preservation. The white stone seems to have been lost.

Quite near skeleton 14, to the east of the vessel at the head, lay an *animal figure* (117).

Skeleton 15. Skeleton in the crouching position at +0.75 m. and disposed in an easterly direction. On the body were *two clay vessels*, (one bowl and one bellied jar.) Under the skeleton were *three stones* (116). About 80 cm. to the north of these vessels, one metre from the east wall, stood a small *red, black-painted clay vessel* at the same level; it is not clear whether this belonged to the same skeleton, though it is very possible. To the west of the black vessels was found a small *copper blade*.

Skeleton 20. Skeleton in the crouching position at a height of +0.95 m., lying on the left side with head to the east and legs to the west; face to the south. Behind the head was a *hemispherical clay bowl*. (Pl. XIII, Fig. 118).

Skeleton 21. At +0.70 m. lay a *child's skeleton* in the crouching position. The skeleton was lying on the right side with the head to the east and the legs pointing west; face towards the north. Before the forehead stood a *hemispherical clay bowl*. (Pl. XIII, Fig. 119).

Skeleton 22. At +0.80 m. was found a *child's skeleton* in the crouching position. The head pointed east and the legs to the west; face towards the south. Behind the nape of the neck stood a small *hemispherical, black clay bowl*. (Phot.).

Graves in C III

Skeleton 1. At +0.30 m. lay a *skeleton* crouching on the left side and with the head to the east and legs to the west. Together with the skeleton were found *four clay vessels*, a—d, one of which was, however, badly damaged (two fragments of red earthenware). The vessels lay behind the head (Pl. XIII, Fig. 120).

Skeleton 2. Skeleton in the crouching position, lying on the right side with the head to the east and legs to the west; face to the north. Behind the head were found *two low clay bowls*. Height +0.35 m. (Pl. XIII, Fig. 121).

Graves in D II (= D III)

Skeleton 1. Remains of a skeleton at +2.70 m., consisting of a crushed cranium and thigh-bones.

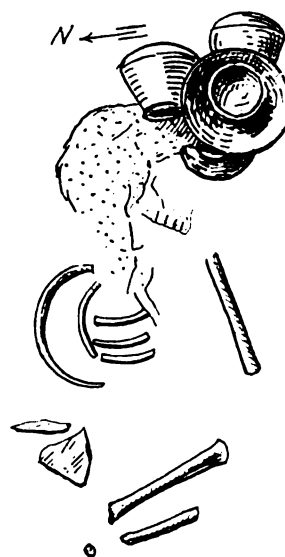


Fig. 123

Skeleton 2. Remains of a skeleton at +2.70 m. Skeleton in the crouching position, lying on the right side with head pointing east and legs to the west.

Skeleton 3. Cranium at +2.60 m.

Graves in D III

Skeleton 1. Child's skeleton in the crouching position, lying on the left side with the head to the east and the legs of the west at +2.30 m. Before the chest and the fore-arms of the skeleton stood a little *cup*, in which lay a broken *copper pin*. Before and to the south of the pelvis were four or five small *fragments of a clay jar*. (Drawn and photographed) (Pl. XIII, Fig. 122).

Skeleton 2. At +1.80 m. was found a *child's skeleton* in the crouching position, lying on the left side with the head to the east +10° N. and legs to the west +10° S. Above and behind the head were *four clay vessels*: nearest the forehead a *»fruit-stand»*, to the west and partly under this a *little red, black-painted clay vessel*, and to the east of the fruit-bowl *two black-grey clay vessels*. (Pl. XIII, Fig. 123).

Skeleton 3. At +1.60 m. a skeleton in the crouching position, lying on the right side with the head pointing east and the legs west; face to the north.

Graves in E I

Skeletons 1—26. At a height varying between +6 and +7 m. were found 26 human skeletons. Four at +7.0, nine at +6.80, two at +6.70, one at +6.10, two at +6.50, four at +6.40, one at +6.35, two at +6.30, one at +6.0 m. These skeletons lay with the heads pointing N. N. W. (2), N. W. (11+), W.—W. N. W. (6+), most of them stretched out full length on the right side. In a number of cases only the crania were to be found. It is probable that the majority of the skeletons and crania belonged to children (Figs. 39, 40 and Pl. XIV, Fig. 124).

Graves in E II

Skeleton 1. At a height of +6.20 m. was found a *child's skeleton* in the crouching position, lying on the right side with the feet towards the north-east and the head towards the south-west. The skeleton was not in a good state of preservation. In the mud wall to the north-west of and above the skeleton lay a large fragment of a red, monochrome *clay vessel*. At the feet stood a *triple vessel with spout*. Quite near this (0.35 cm.) stood a *round jar*, and near the skeleton's head was a black, *biconical clay vessel* with horn-like, perforated appendix. Some *beads* were also found here. (Pl. XIV Fig. 125).

Skeleton 2. Just near the east wall lay a *skeleton* in the crouching position at +6.30 m. The head was towards the west and the legs towards the east. The skeleton lay on the left side, so that the face was turned to the north. At the feet were found a *large bowl-shaped clay vessel* on a foot and a *smaller, globular vessel*.

Skeleton 3. *Skeleton* in the crouching position at +6.10 m. (Pl. XIV, Fig. 126). The skeleton was lying on the left side with the head to the west and the legs to the east. To the south of the hips lay a fragmentary *copper awl*. On the hip stood a large, black *dish on a foot* (b), just below this a *round vessel* (a) with a short neck and a *lid* lying away (c); above and near the copper awl was a *round vessel* (f), above this again a *biconical vessel* (d); at the latter's mouth an *open bowl* on a foot (g); nearer to the head an *eggshaped vase* (h) standing erect; between the latter and the head, behind the head, *two black clay vessels*, one of

them round and spouted (i), the other like a square ink-well (j); and finally a cylindrical *alabaster vessel* (k) and a *biconical bead* (l). In addition were found a *bead* in a bowl and here and there broken bits of *cooking utensils* and *bones of animals*. Also about 80 *beads*.

Skeleton 4. At +6.40 m. was found the cranium of a *child's skeleton*. This lay together with two oval *clay vessels*.

Skeleton 5. *Skeleton of a child*, lying in the direction north-south, very fragmentary. At the head to the north a *pot with spout* (a) at +5.30 m. Below the feet *two other* such vessels (b, c) at +5.45 m.

Skeleton 6. In the north wall at a height of +4.0 m. lay a *skeleton* in the crouching position (without head?) with the upper part of the body pointing east and the legs pointing west. The skeleton lay on the left side. At the feet stood two *clay vessels*, one of them biconical and the other cylindrical. (Phot.).

Skeleton 7. At +4.90 m. were found fragments of a *skeleton* that had obviously lain in an east-westerly direction. The fragments comprised the skull and some smaller bones from the upper part of the body.

Skeleton 8. At +4.65 m. was found a *skeleton* in the crouching position, lying on the left side with the head towards the north and the legs towards the south. One of the hands was stretched up towards the chin. Near the skeleton's feet stood two *clay vessels* (a globular jar with lugs and a deep bowl), as well as fragments of a *goblet*. (Phot.)

Skeleton 9. At +4.70 m. lay a *skeleton* in the crouching position. The skeleton lay on the right side, with head pointing east and legs pointing west. The legs were well drawn up; the arms were bent and the hands stretched out before the face. Behind the pelvis were *three clay vessels*: one cylindrical, one biconical and one round and eggshaped. (Pl. XIV, Fig. 127).

Skeleton 10. At +3.80 m. a *skeleton* in the crouching position, lying on the right side with the head to the north and the legs towards the south; face to the west. Before the face and the forehead were *three clay vessels*, one eggshaped, one bellied, one low and cylindrical. The knees formed a right-angle with the hips. The length of the skeleton in its hunched up position was 90 cm. The arms were bent, with the hands before the face. (Pl. XIV, Fig. 128).

Skeleton 11. Immediately to the south of grave 10 but rather deeper, viz., at +3.20 m., a *skeleton* in the crouching position and on the right side. Head towards E. S. E. and legs W. N. W. Skull not preserved (crushed). Below the cranium a *pseudo-cylindrical clay vessel* and at the feet *three others*. (Pl. XIV, Fig. 129).

Skeleton 12. Near the west wall of the shaft lay a *skeleton* in the crouching position and on the left side. The head pointed east and the legs to the west; the face was towards the south. The arms were bent and the hands stretched out before the breast. Height +3.0 m.

Near the head of this skeleton stood *two clay vessels*, one egg-shaped, which was standing in a *pseudo-cylindrical vessel*. Higher up to the north, 23 cm. above this skeleton, stood half of a *large, black clay vessel*, that possibly did not belong to the skeleton. (Phot.)

Skeleton 13. In the north-east part of the shaft, at +5.0 m. was found a *child's skeleton* with the skull pointing west and the legs to the east. Behind the skull stood *three clay vessels*, all provided with spouts. Two of these vessels were *triple vessels*. (Pl. XV, Fig. 130). It should be observed that this grave lay 1 m. 20 cm. below grave E II S', which also contained a triple vase of the same kind and the same age. It is probable that this was a family burial place. Two children had been buried on different occasions with kindred burial gifts.

Skeleton 14. At +4.20 m. was found a little *child's skeleton* in the crouching position. The skeleton was lying on the right side with the head towards the north and the legs towards the south. No finds.

Skeleton 15. At +4.10 m. was found a *skeleton (of a child?)* lying in a south-northerly direction. No finds.

Skeleton 16. At +4.40 m. lay a *skeleton* in the crouching position with the head towards the north-east and legs towards the south-west. The skeleton was lying on the right side. Skull crushed. To the north-east of the cranium were *two clay vessels* (one biconical clay vessel with lid) and to the south-west of the feet another, *biconical vessel*. (Phot.)

Skeleton 17. At + 4.40 m. were found the remains of a *skeleton* lying in a north-southerly direction. To the north of the skeleton were *three clay vessels*, nearest the skeleton a large bellied vessel and a little

farther away a deep bowl and a round vessel with lugs. (Phot.)

Skeleton 18. At +4.0 m. a *skeleton* (of a child?) in the crouching position and on the right side. Head towards the north, legs towards the south. No finds.

Skeleton 19. At +3.0 m. lay a *skeleton* in the crouching position with the upper part of the body on the back, otherwise on the left side. The arms were bent, so that the hands lay before and below the face. Oriented east-west. At the feet lay *four clay vessels*, one rounded, biconical, on the leg below the knee, to the west of this two cylindrical vessels and a few centimetres further to the west a biconical vessel with long spout. (Pl. XV, Fig. 131).

Graves in E III

Skeleton 1. *Skeleton* in the crouching position and on the right side, with the head pointing west and the legs to the east; face towards the south. Height +1.20 m. Near the cranium were *two clay vessels*, the one serving as a *lid* for the other (a low bowl and a bellied jar; Pl. XV, Fig. 132).

Skeleton 2. *Skeleton* in the crouching position, lying on the left side with the head towards E. N. E. and the feet pointing W. S. W. The hands lay before the face, which was towards the south. This skeleton was rather badly decayed, owing to the dampness of the clay at +0.10 m. To the east of the head, that is to say, in front of the face, were *four clay vessels*, and before the knees was another *clay vessel* (Pl. XV, Fig. 133; not all vessels visible).

Skeleton 3. *Skeleton* in the crouching position at +0.90 m. Head towards the east and legs pointing west. Lying on the left side. No finds.

Skeleton 4. *Skeleton* in the crouching position, lying on the left side with the head pointing east and the legs pointing west; face towards the south. Together with this skeleton were *three clay vessels*, one bellied, below the legs, and two above the head, to wit, a bellied, biconical vessel and a hemispherical bowl serving as a lid for the latter. Height +1.40 m. (Pl. XV, Fig. 134).

Skeleton 5. At +1.0 m. a *skeleton* in the crouching position, lying on the right side with the knees straight out from the body and the arms bent, so that the hands lay before the face. Oriented east-west. Above the head *two vessels*, a hemispherical bowl and a bellied jar. (Pl. XV, Fig. 135).

Skeleton 6. In the east wall of the shaft lay a *skeleton* at +2.35 m. The skeleton was crouched up with the head to the west and the legs to the east. It was lying on the right side and belonged to a *child*. Before the head (to the west and south of the same) lay a *cylindrical vessel* (a), a *round little vessel painted red with black patterns* (b), a *little biconical mug* (c) and a *small cup on a foot* (d), the three lastmentioned being toy vessels (in miniature). On the cranium were *two small spiral rings of silver* (e). Behind the feet, to the east, lay *five clay vessels* (f—j). (Pl. XVI, Fig. 136).

Skeleton 7. *Skeleton* in the crouching position and lying on the right side. Disposed east-west. Height +2.20 m. Near the forearm and the ribs were the remains of *copper sheet*. To the north-east of the cranium were *three clay vessels*, nearest the head one of red earthenware with black decoration, and above this a jar with a hemispherical bowl as lid. (Pl. XVI, Fig. 137).

Skeleton 8. At a height of +2.10 m. were found the remains of a *child's skeleton* in the crouching position, lying on the right side in an east-westerly direction. Near the fore-arms was a *spiral arm-ring of copper*, at the feet a *red clay vessel with black ornamentation* and high neck. (Phot.)

Skeleton 9. At 2.20 m., in the south wall, was found a *child's skeleton* with head pointing east.

Skeleton 10. At +1.50 m. was found a *skeleton* in the crouching, rather badly decayed and lying on the right side with the head towards south and legs pointing north. Together with this skeleton were *four clay vessels* (a—d), two near the hips, to wit, a bellied jar with a cup-shaped lid, another behind the hips (c) and another beside the elbows (d). In addition to the above, an *arm-ring of copper*. (Phot.)

Graves in F I

Skeleton 1. A *skeleton* was found at +6.70 m. oriented W—E, lying on the right side. Without finds.

Skeleton 2. At +7.10 m. was found a *skeleton*, stretched out, lying on the right side and oriented with the head towards the W., or W. N. W., the feet towards the E. or E. S. E. On both sides of the skull two standing bricks, 19.5 × 19.5 cm. Behind the head sherds of pottery, one glazed.

At the side of the skeleton three other glazed sherds. ((Pl. IV, Fig. 52).

Skeleton 3. Partly in the western wall and at a height of + 7.20 m. a *skeleton* was lying, with the head towards the W. N. W. and the feet towards E. S. E.

Skeleton 4. At +6.90 m. was found the *skeleton* of a *child*, oriented W—E.

Graves in F II

Skeleton 1. At + 6.80 m. was found the skull of a *skeleton*. Together with this on the west side a high, erect, *cylinder-shaped clay vessel* and on the east side an *alabaster vessel*. In the latter lay an *alabaster bead* or *spindle-wheel*. Head probably towards the west.

Skeleton 2. At +5.80 m. a *skeleton* in the crouching position with missing skull. Oriented south-east — north-west, with drawn up legs and arms crossed over the breast. No finds.

Skeleton 3. *Skeleton of child* in the crouching position at +5.20 m. with head pointing south-west and legs pointing north-east. Crown of head upwards. Together with the skeleton were *three clay vessels*, a bellied one with a neck, a bellied vessel with spout and a round vessel on a foot and with a stopper. (Pl. XVI, Fig. 138).

Skeleton 4. In the south-east part of the shaft, at +4.55 m., lay a *skeleton* in the crouching position and on the left side. Head pointing north and feet pointing south. The thigh-bones formed a right-angle with the body. To the north of the head stood *four clay vessels* and a *lid*. Also a *copper pin*. (Pl. XVI, Fig. 139). At the hips a little *copper bullet*. The large jar (a), which was found upside down, was provided with a lid, the latter having a handle or lug on top.

Skeleton 5. *Skeleton* at +4.0 m., lying on the belly with the head towards the north-east and legs towards the south-west. The head lay with the face downwards, though inclining rather on the left cheek. The left arm was bent, with the hand a little to the side of the left shoulder; the right arm bent, with the hand on the lower part of the thorax. The thigh-bones wide apart, knees bent in a right-angle with the feet to the left (north). Beside the right knee stood a *dish*, upside down, and the upper part of a *black clay vessel* with a neck. Beside the left foot were

the remains of a large, red *cooking utensil*, obviously lying near to or forming a fire-place. (Pl. XVI, Fig. 140).

Skeleton 6. *Child's skeleton*, stretched out full length and lying in a north-easterly — south-westerly direction at +4.10 m. Fragments of clay vessel near the head.

Skeleton 7. *Cranium* at +3.90 m.

Skeleton 8. At +3.85 m. the remains of a *child's skeleton*, lying with the head towards the east and legs towards the west.

Graves in F III

Skeleton 1. *Child's skeleton* in the crouching position with the head towards the west and legs towards the east, lying on the right side. Near the feet, below the lower part of the legs, was a large bellied *clay vessel with semi-spherical bowl as a lid*; before the forehead *two small clay vessels* (the red painted one being furthest to the west); and near the neck five small *carne-
lian beads* (one lost). Height +2.95 m. (Pl. XVI, Fig. 141).

Immediately to the north, 2.5 to 3.0 dm., and below this skeleton were found the remains of a *black clay vessel* (a dish of fine earthenware). W. N. W. of the child's skeleton lay a *little black jar*.

Skeleton 2. *Child's skeleton* at +2.20 m., lying on the right side with the head towards the north-east and legs towards the south-west. Near the head, under the forehead, were found a number of *black and white stone beads*. Between the face and the knees stood a *clay jar*, covered by a *semi-spherical bowl*. (Pl. XVII, Fig. 142).

Skeletons 3—7. lay in a circle at a depth varying between +2.05 and +2.25 m. This was not a matter of an ordinary burial, but of a sacrifice(?) or heaping up of human bodies, which lay with distorted and in part mutilated limbs. Together with the *human bones* or immediately under and over them lay numerous *bones of sheep*, belonging to mutilated bodies of sheep. Large quantities of *earthenware* lay strewn about the place. Several *chipping-stones*, also of flint, were found, as well as *flint-flakes*, *copper pins*, *copper rivets* etc. (Pl. XVII, Fig. 143 and Fig. 45).

Skeleton 3 lay with the face upwards, the part below the brows was broken; the lower jaw fallen; right shoulderblade up to the left; left upper arm stretch-

ed down at the side, continuing in an obtuse angle with the fore-arm (but also *sheep bones?*). The right humerus lay athwart the body with the upper part to the right (south) and the under part to the left (north). The corpse had been laid on its back. Nearest to the right side lay a couple of bones of sheep. The trunk (of this skeleton?) lay by itself farther to the south, ending with the two hip-bones, which lay reversed. Beside the hips lay the foot of a *red vase of coarse ware*. Beside the thorax were *sheep-bones*. On the head was found a bent *copper pin*, and under the left shoulder-blade a *flint-flake*. Long skull with all 16 teeth in the lower jaw well preserved. Thorax and pelvis lay reversed, with the back part upwards. The thigh-bone of the right hip was still partly in the socket. Near the shin-bone was a round *chipping-stone*. The ulna was found athwart the breast. Height +2.25 m.

Here and there in the earth around the skeletons could be seen *traces of coal*, e. g. under the left shoulder-blade of skeleton 3. One of the thigh-bones of this skeleton lay crosswise from north to south, another probably parallel with a shin-bone in east-westerly direction, proceeding from the hips.

Skeleton 4 lay farthest to the north, rather inclined on the left side and with straight legs. The trunk lay drawn over on the belly, the head in a broken clay vessel. Under the pelvis stood a broken *cylindrical clay bowl*, near the foot a *flint ball*. H. +2.15 m.

Skeleton 5. A skull lay on the foot of another skeleton, the foot being disposed in a north-southerly direction. The cranium, however, belongs in all probability to skeleton 5, which stretches from south to north but is difficult to distinguish from other skeleton parts. H. +2.0 m.

Skeleton 6 lay on the belly with the spine uppermost. The right thigh-bone lay parallel with the back and ribs, while the left thigh-bone lay stretched out straight. The cranium was missing. Under the pelvis of the skeleton were found a *sheep's jaw* and various other *bones of sheep*. In the mouth part of skull 6 was found *half a bone chisel*. H. +2.05 m. A skull lying to the west was numbered as *skeleton 6x*. It lay at +1.95 m. Near the same lay another *skull*, which was numbered as 7 y.

- Skeleton 7.* The skeleton that was marked as skeleton 7 lay on its belly; the skull was not in its place. At the hips was a *round stone*. A couple of *round chipping-stones* were found between skeleton 4 and the heads 6 and 7. Under the skulls 6 and 7 lay a *sheep's jaw* and *bones of sheep*. Traces of coal were found everywhere mixed with the skeletons. A large number of *potsherds*, including some red- and black-painted ones, were picked out from among the skeletons. Among the bones of animals were also some belonging to *goats* and *pigs*.
- Skeleton 8.* Near the west wall at +2.15 m. a fragmentary skeleton, presumably in the crouching position with the head towards the south (S. S. W.) and legs towards the north (N. N. E.). No finds. (Phot.).
- Skeleton 9.* At a height of +2.0 m. the remains of a skeleton with *two clay vessels*, to wit, a jar and a hemi-spherical bowl, lying over the former.
- Skeleton 10.* At +1.65 m. a skeleton lying stretched out on the belly. Upper part of the body pointing S. W. and feet N. E. Skull missing; no finds. (Pl. XVII, Fig. 144).
- Skeleton 11.* Lower part of skeleton in the crouching position, lying on the left side. Height +1.65 m. Legs towards the east. Only the remains of the pelvis region and lower extremities.
- Skeleton 12.* Remains of a *cranium*.
- Skeletons 13—16.* In the north-west corner of the shaft, at +2.25—+2.30 m., lay *four crania* close together. With these were *four clay vessels*. It is possible, however, that 14 and 15 are only parts of the same cranium. (Pl. IV, Fig. 46).
- Skeleton 13* was a little *child's skeleton* in the crouching position, disposed N. E.—S. W. Height +2.25 m. To the west of this skeleton lay the two half-crania 14 and 15.
- Skeleton 16* lay with the cranium towards the east and had a continuation in the mud wall to the west. Furthest north lay a *cylindrical clay vessel* (a) belonging to this skeleton, and in addition a *piece of flint*. Belonging to the child's skeleton no. 13 were a broken *cylindrical vessel*, a *round egg-shaped vessel* and a *bellied ditto with two lugs*.
- Skeleton 17.* Skeleton in the crouching position, lying on the left side, though the trunk was more on the back. Head pointing west and legs to the east; face towards the north. Height +0.50 m. The legs were drawn up at a right-angle and rested on the left side. The right knee was rather higher than the left. The right arm was stretched out straight, so that the hand rested under the pelvis; the left arm was bent, with the hand on the abdomen. The head was inclined to the left. S. W.—N. E. No finds. (Pl. XVII, Fig. 145).
- Skeleton 18.* Skeleton lying on the back, stretched out full length with the head to the east and legs to the west. Height +0.65 m. The right arm was stretched out to the right. Near the fore-arm was a *hemispherical bowl* (conico-cylindrical). (Pl. XVII, Fig. 146).
- Skeleton 19.* Skeleton in the crouching position at +0.35 m. The skeleton lay on the right side with head to the east and legs to the west; face towards the north. The arms were bent, so that the hands were stretched up towards the face. The knees were bent so as to form an acute angle — the left knee higher than the right. The feet lay one on top of the other. Above the crown of the head, a little to the rear, lay a *hemispherical clay bowl*. (Pl. XVII, Fig. 147).
- Skeleton 20.* Child's skeleton in the crouching position, lying on the left side with the head pointing S. E. and the legs N. W. Height +0.60 m. The right knee lay a little above the left. The left fore-arm stuck out from under the body over the right thigh-bone. No finds. (Phot.).
- Skeleton 21.* Skeleton lying crouched on the right with the head to the east and legs to the west; face to the north. Height +0.05 m. Above the forehead towards the east lay *two small clay vessels*, one of them a hemispherical bowl and the other a bellied clay vessel outside the former. The arms were bent, the left arm at an angle over the breast. The right arm bent at an acute angle with the hand before the face. 1.45 m. from the tips of the toes to the crown of the head. (Pl. XVIII, Fig. 148).

Graves in G I

- Skeleton 1.* Skeleton lying stretched out at full length on the right side with the head pointing W. N. W. and legs E. N. E. Height +7.10 m.
- Skeleton 2.* Immured in the south wall was a *child's skeleton*, partly visible and lying at +6.80 m. with the head pointing W. N. W.
- Skeleton 3.* Child's skeleton at +6.80 m. — oriented W. N. W.—E. S. E.

Skeleton 4. In the west wall of the round brick tower lay a *female skeleton* stretched out at full length on the back. Oriented N. N. E. (head) and S. S. W. (feet). To the right of the skeleton lay a pair of *scissors* with two shanks (965). In the mouth were 6 + 1 *glass beads* (966); under the chin two *earrings of bronze* (964); further, an *iron* piece with impression of cloth, like the clasp of a belt (965). The skeleton lay at +7.40 to +7.50 m. Bricks were found in the west wall at the same level as the upper part of the skeleton. The female skeleton lay partly with the upper part of the body (as far as the hips) in a niche in the wall. The grave may have been dug after the destruction of the tower. This is even probable, since no bricks were found directly over the skeleton. Originally, however, bricks lay as far up as to the skull and behind the skull further in the wall (Pl. V, Fig. 62).

Graves in G II

Skeleton 1. In the grave lay a *skeleton* in the crouching position at +6.50 m. The skeleton was disposed N—S and rested on the left side with the face towards the east. Together with these remains were two intact wide and deep *bowls* with broad open spouts and a *cooking utensil* of coarse ware with a handle. At the nape of the neck lay a *copper ring*. (Pl. XVIII, Fig. 149). The grave was first noted on the plan for stratum G. I.

Skeleton 1 a. *Skeleton* in the crouching position, lying on the left side. Height +6.50 m. Disposed N. N. E.—S. S. W. Together with this skeleton were found *two clay vessels* that lay quite covered by bricks from the tower. One of them was a red clay bowl with short spout, the other consisted of the remains of a mat-red cooking utensil.

Skeleton 2. The upper part of a *skeleton*, probably crouching in the direction N. E.—S. W. The head was face upwards. Height +6.0 m.

Immediately to the north-west of the head lay an *alabaster plate* (836), and above the head *two clay vessels*, one of them standing crooked, the other erect. On the head lay several *spiral rings of copper* and *copper beads* (838), *two beads of greenish stone* (839) and a *large bead or spindle-whorl*. Below and behind the two jars

were various *bones of animals* (ankle bones and a number of cervical vertebrae) at least three *bone pins* (837) and a *rosette of limestone* or *faience* (840). (Pl. XVIII, Fig. 150).

Skeleton 3. Just near the south-east part of the tower was observed a *skeleton* in the crouching position and on the right side. The skeleton lay with the head to the west and the legs to the east. The hands were against the lower jaw. The right thigh-bone was stretched out straight from the hip, the left in an obtuse angle. Height +5.90 m. Before the forehead were a large oval *clay vessel* with a high neck and the remains of two other, *broken vessels*. (Pl. XVIII, Fig. 151).

Skeleton 4. At +6.60 m. was a *skeleton* of which only the head was found. It lay just under the tower-wall, and together with it were also found *two clay vessels*, *beads* and *copper rings*. (Pl. XVIII, Fig. 152).

Skeleton 5. Remains of a *skeleton* (cranium) at a height of +5.50 m. Together with this, *five beads* of stone or faience and a *copper ring*. (1002).

Skeleton 6. *Child's skeleton* at +5.30 m. Only fragments of the pelvis, fingers, feet etc. Under the skeleton was hard packed mud with mixture of lime concretion. Also half-burnt, bricklike clay. A *copper ring* (earring) lay beside one of the upstanding branches of the lower jaw.

Skeleton 7. In the west wall lay a *skeleton* in the crouching position and on the right side, with the head pointing W. S. W. and the legs E. N. E. Height +6.0 m. This skeleton had belonged to a young person. At the feet lay a *bottle of black earthenware* shaped in the form of a *female torso*. To the north of the head was a little *cup* of striped violet *alabaster*. (1003). The trunk of the skeleton was, however, so twisted that the back lay uppermost while the head was directed downwards to the right. Under the hips was red-burnt earth, and under this again some coal. The total length of the skeleton from the crown to the heels was 0.76 m. One not infrequently finds the earth under child skeletons hard packed and mixed with particles of lime. This was also observed in the present case. (Pl. XVIII, Fig. 153).

Skeleton 8. In the west wall a *skeleton* in the crouching position with head pointing west and legs to the east. Height +5.0 m. At the feet was found a *clay vessel*. At

the head *three more*. Three were provided with feet, one was a round-bottomed flask. (Pl. XIX, Fig. 154).

Skeleton 9. *Skeleton* in the crouching position to the south of a fireplace near the north side of the shaft. Height +4.8 m. The skeleton lay on the left side with the head towards the north and the feet towards the south. The arms were bent, so that the hands lay just under the chin. Behind the head lay *three small clay vessels*, two of which were provided with spouts and handles. The length of the trunk was 87 cm. The right knee was more bent than was the left. (Pl. XIX, Fig. 155).

Skeleton 10. At a height of +4.0 m. lay a *child's skeleton* in the crouching position. The skeleton lay on the left side and had the head pointing west and the legs pointing east. *No finds*. The arms were stretched forward in the direction of the knees, which formed a right angle with the trunk.
(2 m. farther to the east were the remains of another skeleton).

Skeleton 11. Just S. S. E. of the large fireplace in the north part of the shaft, at +3.95 m. lay a *skeleton* in the crouching position but on the back. Oriented south-north. The legs were drawn up on the chest so that the knee-caps rested just under the lower part of the collar-bones. The arms were bent at the elbows, so that the hands lay just under the chin. The cranium had shifted somewhat to the right. At the right hip was a more than hemispherical *bowl*; at the feet, on the right side, was a *curved jar* with neck. Under the feet were some fragments of a *high bowl*, thus making a third vessel. The earth under the skeleton was hard packed and filled with lime concretion. (Pl. XIX, Fig. 155 b)

Skeleton 12. *Skeleton* in the crouching position, lying on the left side with the head pointing west. Oriented W. S. W.—E. N. E. Height +3.90 m. At the feet, just to the southeast, a *round, egg-shaped, black clay vessel*. The shoulder-blades were uppermost, so the skeleton was partly lying on the belly. Legs pointing N. E.; the right leg doubled up, with the foot at the head of the thighbone. The left leg from the knee stood erect. (Pl. XIX, Fig. 156).

Skeleton 13. In the corner lay a *skeleton* in the crouching position N.—S. at a height of +3.7 m. The skeleton lay on the left

side, with the arms bent and the hands under the chin. The thigh-bones were stretched out at almost right angle with the trunk, and the knees bent to form an acute angle. Above the head were *three clay vessels*, the most easterly of the three being egg-shaped, that to the north-west cylindrical, while above and between the two already mentioned vessels was a round jar with two lugs under the low neck. (Pl. XIX, Fig. 157).

Skeleton 14 and skeleton 15. Two skeletons lying at +3.60 and 3.50 m. respectively. Both in the crouching position, parallel one behind the other. Both heads pointed east while the legs pointed west.

No. 14 lay behind the other skeleton with a bent back, head bent forward (on the right side), arms bent, with the hands before the face; right knee bent upwards towards the elbow (almost parallel with the fore-arm). The left thigh-bone forming an obtuse angle with the trunk but with the knee forming an acute angle, so that the foot was just under the pelvis.

No. 15 lay with the upper part of the body on the belly and the back uppermost; left arm stretched out down the south side of the body; right arm bent in a right angle. The right knee was touching the left hand, the right leg much bent. The left thigh stretched more downwards, forming an obtuse angle with the trunk; knee bent over, so that the feet lay one on top of the other. The feet lay with the toes over the left knee of skeleton 14. (Pl. XIX, Fig. 158).

Skeleton 16. This *skeleton* lay at +3.35 m. in the crouching position and on the left side. Head pointing north and legs to the south. Besides the legs were fragments of a *clay vessel* belonging to a high cup (restored).

Skeleton 17. *Skeleton* in the crouching position, lying on the belly with the head towards the east + some degrees to the north. The knees drawn up towards the belly. The skeleton lay partly on the right side. On the knees was a *cylindrical clay vessel*, and below this an *egg-shaped vessel*. Above the feet a *cylindrical vase*, in which was a *biconical vase*, thus making in all four clay vessels. Height +3.70 m. (Pl. XX, Fig. 159).

Skeleton 18. *Skeleton* lying in the crouching position and on the left side, half on the belly. Head pointing west and legs to the east. The arms were bent so that the

hands rested before the face. The thigh-bones were bent to form an obtuse angle with the trunk; knees bent to form an acute angle. The right foot rested just above the left. The face was turned to the north. Before the face was a *rounded jar* and above this again a *hemispherical bowl* with a cracked bottom. Height +2.75 m. (Pl. XX, Fig. 160).

Skeleton 19. *Skeleton* in the crouching position at +2.60 m., lying on the right side with the skull to the east and legs to the west. Behind the head were *two small clay vessels*, to wit, a round *jar* and a little smashed *hemispherical bowl*. (Phot.).

Graves in G III

Skeleton 1. *Skeleton* in the crouching position and on the left side. Head towards the east and legs towards the west. Height: head +2.35, pelvis +2.25 m. The lower part of the legs formed an almost right angle with the trunk. Right arm bent at a right angle, so that the hand rested at the left elbow; left arm bent in such a way that the hand rested before the face. The pelvis was lower than the cranium and the feet. On the neck lay a conical *spindle-whorl* or stone *bead* (1434). Behind the shoulders and back were *three clay vessels*; nearest the head an *egg-shaped vessel*, somewhat lower than this a *cylindrical vessel*, and finally, furthest removed from the head, a *biconical vessel*. (Pl. XX, Fig. 161).

Skeleton 2. About in the middle of the shaft a *little child's skeleton*, lying on the right side in the crouching position. The skull was missing with the exception of the lower jaw. Oriented west-east. Height +2.0 m. The hands were stretched out before the face, which was turned to the south. At the neck and above the upper-arm were a quantity of *black and white stone beads*. 40 cm. above the foot and belonging to another grave(?) were a number of *cylindrical bone beads*. Under the chin of the child skeleton were several *copper fragments* (of *pin*) and around the right wrist the remains of a *copper bracelet*. A third of a meter to the west of the head stood *two clay vessels*, one of them a *hemispherical red bowl* of coarse ware and the other a *black bowl* with angularly bellied side. 10 cm. above the skeleton was to be seen a 2—3 cm. thick layer of coal, and 1.5 dm. above this was a

further similar but rather thinner layer. (Pl. XX, Fig. 162).

Skeleton 3. *Skeleton* in the crouching position, lying on the right side with the crushed skull towards the east (inclination to the north) and legs to the west (inclination to the south). The face towards the north. Arms bent, so that the hands rested before the face. Above and on the hands were *three clay vessels*. On the left hand was a little *low cup (bowl)* with angular line and with impression of textile on the back. Above the right hand was a *conical-cylindrical bowl* and outside both a bellied *carinated jar* with a low, wide neck. On the pelvis was a fragment of *black, sooty earthenware*. The skeleton in question lay on a hard-stamped floor. The thigh-bones formed an obtuse angle with the trunk; left shin-bone crossing the right, which lay below. Height +1.40—+1.45 m. (Pl. XX, Fig. 163).

Skeleton 4. On the same floor of hard-stamped clay as grave S 3 lay thigh-bones, fragments of shin-bone and fibula as well as bones of the foot — all belonging to a *skeleton* that lay W. N. W.—E. S. E., possibly stretched out full length. Height +1.40 m. At the south-east end was the *lid of a clay vessel*. (Phot.).

Skeleton 5. In the west wall, about 1 m. from F III, a *skeleton* in the crouching position with the hands before and under the chin. The skeleton lay on the right side with the head towards the east and legs to the west. Before the face was a large *clay jar* of brown earthenware and above this were *two(?) hemispherical bowls* of black clay, standing one inside the other. Height +0.45 m.

Graves in H I

Eleven Mussulman skeletons lying with the heads pointing W. N. W. and stretched out full length, the majority on the right side. (Pl. VI, Fig. 71).

Skeleton 1. *Child's skeleton* +7.40 m.

Skeleton 2. *Skeleton* at +7.20 m. Before the forehead a *clay lamp*, red in colour, heart-shaped and with short handle. + bones of animals. (Fig. 69).

Length 11.95 cm. Breadth 8.0 cm. Height 3.6 cm.

Skeleton 3. *Skeleton* at +7.10 m., lying with the trunk on the belly.

- Skeleton 4.* Skeleton lying on the back, +7.20 m.
Skeleton 5. Child's skeleton, +7.60 m.
Skeleton 6. Skeleton, +7.40 m.
Skeleton 7. Skeleton, +7.60 m.
Skeleton 8. Skeleton, +7.30 m.
Skeleton 9. Skeleton lying on the back, +7.30 m.
Skeleton 10. Skeleton at +7.0 m. To the east of and behind the head of this skeleton, at +7.40 m. was a large flat stone.
Skeleton 11. Large skeleton lying on the right side, +6.90 m.

Graves in H II

- Skeleton 1.* Near the south wall in shaft H II lay a skeleton at +5.70 m. oriented south-north. The skeleton lay in the crouching position and face downwards on the right side. At the feet were two clay vessels, one a cooking utensil with handle, the other a wide bowl with broad open spout. (Pl. XX, Fig. 164).
Skeleton 2. A child's skeleton lying on the right side with the face turned to the west. Oriented north-south. Crouching position. Near the fore part of the head were a bellied flask with a narrow neck and a

- long, cylindrical faience bead. Height +5.65 m. (Pl. XX, Fig. 164).
Skeleton 3. Child's skeleton in the crouching position, lying on the left side with knees drawn up on the breast. Oriented S—N. Above the knees and before the face was a cylindrical, narrow clay vessel. Height +5.70 m. (Pl. XXI, Fig. 165).
Skeleton 4. A skeleton with bent back, lying in the crouching position, somewhat as if the corpse were squatting. Height +5.40 m. (Pl. XXI, Fig. 166).
Skeleton 5. 3/4 m. from the south wall was found the upper part of a skeleton lying half on the back and half on the right side. Arms crossed; hands against the chin. Oriented south-north. Height +5.30 m.
Skeleton 6. Skeleton in the crouching position with the head pointing north and the legs to the south. The skeleton lay on the right side. Legs formed a right angle with the trunk. The trunk seemed to be so twisted that the skeleton lay half on the belly. Height +5.30 m.
Skeleton 7, Skeleton 8. Remains of Mussulman skeletons, oriented N. W.—S. E. Respective heights +5.90 m. and +6.0 m.

LIST OF POTTERY FROM GRAVES

Shaft A

Grave A III S^a a (— 0.65 m)

589. Black, polished, knobbed, hemispherical bowl with flattened base, slightly convex outline and plain rim. The upper part of the body decorated with four encircling rows of closely placed knobs. H. 6.3 Diam. 11.0 cm. (Pl. XXI, Fig. 167).
 588. Black, polished, knobbed-and-ribbed squat jar with flat base, convexly curved, symmetrical body and splayed rim. The shoulder is decorated with knobs forming oblique, irregular lines, bordered by two encircling, ribbed lines. H. 17.0 cm. (Pl. XXI, Fig. 168).

Grave A III S³ (— 0.60 m)

437. Grey, polished, hemispherical bowl with flattened base, convexly curved outline and plain rim. H. 5.2 cm. Diam. 10.3 cm. (Pl. XXI, Fig. 169).

435. Grey, polished, squat jar with flat base, convexly curved, symmetrical body and splayed rim. H. 16.0 cm. (Pl. XXI, Fig. 169).
 396. Black-on-red ware, squat jar with flat base, convexly curved, symmetrical body and splayed rim. The red body is covered with black vertical lines at equal distances, the lines and distances are narrow. H. 7.4 cm. (Pl. XXI, Fig. 169).

Grave A III S⁴ (— 0.60 m)

396. Incised, hemispherical, grey-black bowl with flattened base, convexly curved outline and plain rim. The upper part of the body is decorated with six encircling lines. H. 5.8 cm. Diam. 10.05 cm. (Pl. XXI, Fig. 170).
 400. Grey-black, polished, squat jar with convexly curved, symmetrical body. The neck is very short with a wide, outturned rim. H. 12.8 cm. (Pl. XXII, Fig. 170, a).

433. Incised, grey, rather «deep» bowl with flattened base. The outline is slightly convex and the rim is plain. The body is covered with twelve encircling, incised lines. H. 7.0 cm. Diam. 8.55 cm. Pl. XXI, Fig. 170).
401. Grey, polished, squat jar with a convexly curved outline. The neck is concavely splayed with plain rim. H. 13.65 cm. (Pl. XXII, Fig. 170, b).
399. Black-on-red ware, squat jar with flattened base. The body is symmetrically squat and convexly curved. The neck is very short and concave with splayed rim. The painted decoration is almost destroyed. H. 8.45 cm. (Pl. XXI, Fig. 170).
434. Grey, polished, squat, slightly carinated jar with flat base. The belly-line is angularly accentuated, the rim very wide and outturned. H. 9.5 cm. (Pl. XXI, Fig. 170).
398. Black-grey, polished, carinated bowl with out-turned rim. The lower part of the body very splayed and conical; the upper part is slightly tapering, almost cylindrical. The rim is out-turned and flat. H. 2.35 cm. Diam. 6.7 cm. (Pl. XXI, Fig. 170).
397. Grey, polished bowl with an angular line at the middle of the body. The base is flat, the lower part of the body is almost conical and the upper part cylindrical. Plain rim. H. 6.1 cm. Diam. 9.9 cm. (Pl. XXI, Fig. 170).

Grave A III S⁵ (— 0.60 to — 0.50 m)

500. Grey, polished, squat jar with flattened base, convexly curved, symmetrically squat body and wide, out-turned rim. H. 13.7 cm. (Pl. XXII, Fig. 171).

Grave A III S² (+ 0.60 m)

308. Grey, polished, oval jar with flat base and convexly curved, symmetrically squat body. The neck is rather high and wide, concavely splayed with plain rim. H. 19.5 cm. (Pl. XXII, Fig. 172).
309. Grey, polished, «deep» bowl with flat base and slightly convex outline. Plain rim. H. 8.1 cm. Diam. 7.0 cm. (Pl. XXII, Fig. 172).

Grave A III S⁶ b (+ 0.80 m)

544. Grey, polished, patterned curved bottle with flat base. The belly is concavely, the shoulder convexly curved and the belly-line rounded. The neck is slightly splayed with a wide splayed rim. The shoulder is covered with five bordered, encircling hatchings, alternating in two directions. H. 16.8 cm. (Pl. XXII, Fig. 173).
545. Grey, polished, squat, slightly carinated bottle with flat base, conical belly and rather high and convex shoulder. The neck is slightly tapering with a wide, out-turned rim. H. 13.1 cm. (Pl. XXII, Fig. 173).

Grave A II S¹³ (+ 0.95 m)

720. Grey, polished, patterned carinated jar with concave belly and high, «conical», slightly convex shoulder. The base is flat, the rim wide and out-turned. The shoulder is covered with two bordered, encircling latticed bands, alternating with two encircling zigzag bands. The belly is decorated with groups of vertical lines. H. 18.6 cm. (Pl. XXII, Fig. 174).
721. Grey, polished, «deep» bowl, fragmentary.

Grave A II S¹² (+ 1.10 m)

719. Grey, polished, patterned, carinated jar with concave belly, «conical» shoulder and string-hole-projections. The base is flat, the belly-line is very accentuated and angular, the rim wide and slightly splayed. The shoulder is decorated with five bordered, encircling bands, three hatched alternating with two zig-zagbands. On the outside of the rim there are groups of vertical lines. H. 9.9 cm. (Pl. XXIII, Fig. 175).
715. Grey, polished, oval jar with flat base, wide and out-turned rim. H. 12.5 cm. (Pl. XXIII, Fig. 175).
716. Grey, polished, patterned, carinated bowl with flat base, concave and depressed belly, the shoulder almost conical and very high. The belly-line is angularly accentuated. The neck is short and provided with an encircling line in relief. The rim is very wide and splayed, the shoulder decorated with nine bordered, encircling, latticed bands. H. 23.5 cm. (Pl. XXIII, Fig. 175).

718. Grey, almost black, polished, patterned, carinated, «biconical» jar with concave belly and shoulder. The base is flat and the belly-line angularly accentuated. The rim is out-turned, almost flat and pierced by two holes for suspension. H. 18.75 m. (Pl. XXIII, Fig. 175).
717. Grey, polished, almost globular jar with string-hole projections. The base is flat. The neck is short and cylindrical, with out-turned, almost flat rim. H. 9.15 cm. (Pl. XXIII, Fig. 175).

Grave A II S⁸ (+ 1.25 m)

325. Grey, polished, «curved» bottle with flat base. The body is oval, almost symmetrical, and the neck concave with plain rim. H. 13.0 cm. (Pl. XXIII, Fig. 176).

Grave A II S⁶ (+ 3.10 m)

196. Grey, polished, bottle-shaped, globular, spouted and handled jug with flat base. The handle runs from the rim to the middle of the shoulder opposite the spout. H. 14.5 cm. (Pl. XXIII, Fig. 177).
197. Grey, polished, bottle-shaped, globular, spouted jug with flat base. H. 13.5 cm. (Pl. XXIII, Fig. 177).
198. Grey, polished, bottleshaped, globular, spouted and handled jug with flat base. Only traces of handle and rim. H. 7.4 cm. (Pl. XXIII, Fig. 177).

Grave A II S⁵ (+ 4.00 m)

65. Grey, polished, bottle-shaped, globular and spouted jug with flat base. The body is covered with four bordered, encircling hatchings alternating in two directions. H. 13.0 cm. (Pl. XXIII, Fig. 178).
66. Grey, polished, bottle-shaped, globular and spouted jug with flat base. The neck is rather high and concave, terminating slightly splayed with plain rim. H. 13.0 cm. (Pl. XXIII, Fig. 178).
67. Fragments of alabaster jar + a round lid, perforated with two holes.
68. 5 low, white, cylindrical beads of alabaster and 7 black, bituminous limestone beads. (Fig. 596).

Grave A II S⁴ (+ 4.10 m)

61. Grey, polished, carinated (biconical) jar with flat base. The belly is slightly concave, the shoulder rather high and

conical. Rim outturned, almost flat. Close below the rim the shoulder is pierced by two holes for suspension. Shoulder decorated with groups of vertical lines alternating with vertical latticed and zig-zag bands. H. 8.0 cm. (Pl. XXIII, Fig. 179).

63. Grey, polished, «deep» bowl with flat base. H. 8.5 cm. Diam. 10.0 cm. (Pl. XXIII, Fig. 179).
62. Grey, polished, bottle-shaped, globular and spouted jug with flat base. H. 9.0 cm. (Pl. XXIII, Fig. 179).

Grave A II S² (+ 4.60 m)

43. Grey, polished, bottle-shaped, globular and spouted jug with flat base. The body is covered with unbordered, encircling hatchings alternating in two directions. H. 9.7 cm. (Pl. XXIII, Fig. 180).

Shaft B

Grave B III S³ (+ 1.20 m)

948. Grey, polished, squat jar with flat base, wide and out-turned rim. The body convexly curved with a rounded, slightly accentuated belly-line. H. 9.0 cm. (Pl. XXIII, Fig. 181).
947. Grey, polished bowl with angular line at the lower part of the body. The base is flattened, the lowest part of the body splayed, almost horizontal, forming an angle with the slightly splayed upper part of the body. The rim is plain. H. 6.5 cm. Diam. 12.4 cm. (Pl. XXIII, Fig. 181).
- Fragmentary little hemispherical bowl.

Grave B II S²⁰ (+ 2.50 m)

825. Black, polished, squat, slightly carinated jar with flat base. The neck is rather high and slightly splayed with plain rim. H. 10.2 cm. (Pl. XXIV, Fig. 182).
828. Grey, polished, squat jar with flat base and a convexly curved body showing a rounded, slightly accentuated belly-line. H. 13.0 cm. (Pl. XXIV, Fig. 182).
826. Blackish-grey, polished bowl with an angular line at the lower part of the belly and probably flattened base. The lowest part of the body is very splayed, almost horizontal, forming a slight angle with the almost conical, splayed upper part of the body. Plain rim. H. 4.4 cm. Diam. 10.5 cm. (Pl. XXIV, Fig. 182).

827. Black, polished, hemispherical bowl with flattened base, and convexly curved body. The bowl is rather shallow. H. 5.4 cm. Diam. 13.4 cm. (Pl. XXIV, Fig. 182).

Grave B II S¹⁸ (+ 2.50 m)

769. Grey, polished, oval jar with string-hole projections, flat base and slightly depressed shoulder. The neck is short and concave with splayed rim. H. 11.5 cm. (Pl. XXIV, Fig. 183).
771. Black, polished, «curved» bottle with flat base and rather high neck, slightly tapering and with a wide, splayed rim. H. 19.75 cm. (Pl. XXIV, Fig. 183).
770. Black, polished, oval-globular jar with flat base. The body has a rather wide opening with a concave neck with plain rim. H. 7.1 cm. (Pl. XXIV, Fig. 183). Two fragmentary clay-vessels and a lug.

Grave B II S²¹ (+ 2.60 m)

750. Grey-black, polished, hemispherical bowl with small flattened base. H. 4.8 cm. Diam. 10.2 cm. (Pl. XXIV, Fig. 184).
775. Grey-black, polished, squat jar with flat base and convexly curved body. The rim is wide and out-turned. H. 9.15 cm. (Pl. XXIV, Fig. 184).

Grave B II S¹⁹ (+ 2.70 m)

772. Black, polished, squat jar with flat base and a convexly curved body. Slightly accentuated belly-line, wide and out-turned rim. H. 12.4 cm. (Pl. XXIV, Fig. 185).
773. Black, polished, hemispherical bowl with flattened base and convexly curved body. H. 5.8 cm. Diam. 10.5 cm. (Pl. XXIV, Fig. 185).

Grave B II S¹⁶ (+ 2.70 m)

760. Black, polished, patterned curved (egg-shaped) bottle with flat base, slightly concave, almost conical belly and slightly convex shoulder. The belly line is rounded. The shoulder and the upper part of the belly are decorated with bordered, encircling hatchings, alternating in two directions. The neck is somewhat splayed, terminating with a splayed wide rim. H. 15.5 cm. (Pl. XXIV, Fig. 186).

761. Grey, polished, oval-globular jar with string-hole projections on the upper part of the shoulder and flat base. The neck is short and concave. H. 8.5 cm. (Pl. XXIV, Fig. 186).

764. Black-grey, polished, «deep» bowl of very thin ware with flat base and slightly convexly curved body. H. 12.7 cm. Diam. 9.5 cm. Basediam. 4.8 cm. (Pl. XXIV, Fig. 186).

763. Black-grey, cylindrical bowl with flat base and two vertical string-hole projections below the plain rim. H. 10 cm. Diam. 13.8 cm. (Pl. XXIV, Fig. 186).

759. Black, polished, patterned, curved bottle with flat base. The belly is concave and rather narrow, the shoulder convexly curved, the neck cylindrical with a wide out-turned rim. The shoulder and the upper part of the belly are decorated with bordered, encircling hatchings, alternating in two directions. H. 14.0 cm. (Pl. XXIV, Fig. 186).

- Fragmentary, curved (egg-shaped), patterned bottle, resembling N:o 760.

Grave B II S¹⁵ (+ 2.80 m)

758. Black, polished, squat jar with flat base and symmetrically curved body. The rim is wide and out-turned. H. 10.3 cm. (Pl. XXIV, Fig. 187).

757. Black, polished, hemispherical bowl with flattened base. H. 4.2 cm. Diam. 10.0 cm. (Pl. XXIV, Fig. 187).

- Bronze fragment of a ring.

Grave B II S¹⁷ (+ 2.80 m)

- Copper-fragment of a ring.

767. Grey, polished, «curved» bottle with flat base, concavely curved and rather narrow belly, convexly curved and slightly depressed shoulder. The neck is slightly concave with a wide, splayed, almost flat rim. H. 15.4 cm. (Pl. XXV, Fig. 188).

768. Grey, polished, patterned, carinated jar with concave belly and almost conical shoulder. Flat base. Belly-line very accentuated and angular. The rim is out-turned, almost flat and pierced with two holes for suspension. The shoulder is decorated with encircling lines. H. 16.75 cm. (Pl. XXV, Fig. 188).

765. Grey, polished, patterned, curved bottle with flat base, slightly concave and rather high belly, convexly curved and somewhat depressed shoulder. The belly-line is rounded and not accentuated. The neck is rather high and slightly concave, with a wide, splayed, almost flat rim. The shoulder and the upper part of the belly are decorated with bordered, encircling hatchings alternating in two directions. H. 20.0 cm. (Pl. XXV, Fig. 188).
766. Grey, polished, cylindrical bowl with flat base. The body is slightly splayed and the rim plain. H. 8.0 cm.; Diam. 12.75 cm. (Pl. XXV, Fig. 188).

Grave B II S¹² (+3.10 m.)

755. Grey, polished, patterned, carinated jar with concave belly and «conical» shoulder. The base is flat. Accentuated belly-line. The neck is short and concave, with a wide, out-turned rim. The shoulder and the uppermost part of the belly are decorated with bordered, encircling bands with hatchings alternating in two directions. H. 14.7 cm. (Pl. XXV, Fig. 189).
- Fragments of a broken, possibly biconical vessel.
 - Fragments of black-and-red painted earthenware.

Grave B II S⁹ (+ 3.90 m)

642. Grey, polished, «curved» bottle with flat base, slightly concave and rather narrow belly, convexly curved shoulder. Very short neck, slightly concave and tapering, with a wide, splayed and almost flat rim. H. 13.5 cm. (Pl. XXV, Fig. 190).
- 642 b. Little biconical vessel with suspension-holes at the rim and provided with a lid with suspension-holes. H. 6.5 cm. Diam. of lid 4.5 cm. (Pl. XXV, Fig. 190).

Grave B II S⁶ (+4.30 m.)

556. Grey, polished, patterned, almost globular jar with flat base. The rim is wide and out-turned. The whole body is decorated with encircling, bordered, latticed bands of alternating width. H. 25 cm. (Pl. XXV, Fig. 191).

557. Grey, polished, «curved», almost globular bottle with flat base and slightly splayed neck with plain rim. H. 23.1 cm. (Pl. XXV, Fig. 191).
570. Copper pin with crescent-shaped head (see grave-description). (Fig. 645).

Grave B II S⁵ (+4.40 m.)

573. Grey, polished, «curved» bottle with flat base. Almost symmetrically oval body. The rim is missing. H. 13.0 cm. (Pl. XXV, Fig. 192).
- Fragments of two vessels; one was a deep bowl with open spout. Diam. of base 11.25 cm.

Grave B II S⁸ (+4.50 m.)

559. Black-grey, polished, globular bottle with round base. The neck is cylindrical with out-turned flat rim. H. 14.5 cm. (Pl. XXV, Fig. 193).
562. Grey, polished, globular bottle with narrow flat base. The rim is missing. H. 14.5 cm. (Pl. XXV, Fig. 193).
560. Grey, polished, globular bottle with flat base. The neck is cylindrical, with a splayed rim. H. 10.0 cm. (Pl. XXV, Fig. 193).
558. Grey, polished, «deep» bowl with flat base, slightly splayed and convexly curved. The rim is plain. H. 10.7 cm. Diam. 11.5 cm. (Pl. XXV, Fig. 193).
561. Fragments of grey pottery.

Grave B II S⁷ (+4.60 m.)

564. Grey, polished, globular and spouted jug with flat base. The spout is tubular, tapering and placed on the middle of the shoulder. The neck is short and concave with splayed rim. H. 9.95 cm. (Pl. XXVI, Fig. 194).
563. Grey, polished, «deep» bowl with flat base. The body is slightly convex and splayed, with plain rim. H. 11.5 cm. Diam. 11.6 cm. (Pl. XXVI, Fig. 194).
567. Black-grey, polished, globular bottle with round base. The neck is slightly tapering, with out-turned, almost flat rim. H. 13.0 cm. (Pl. XXVI, Fig. 194).
565. Grey, polished, globular bottle with flat base. The neck is slightly concave, pierced with two holes for suspension and provided with a splayed rim. H. 8.75 cm. (Pl. XXVI, Fig. 194).

566. As 563. H. 11.4 cm. Diam. 11.7 cm. (Pl. XXVI, Fig. 194).
(For further details see grave-description).
568. Small alabaster bottle, (Pl. XXVI, Fig. 194).
569. Fragment of copper pin with almost triangular head. (Fig. 194 b).
578. Flint-flake. (Fig. 194 b).
600. Four beads of lapis lazuli, limestone and cornelian. (Fig. 194 b).

Grave B II S¹ (+5.80 m.)

148. Grey, polished, patterned, oval bottle with flat base. The body is symmetrically oval and rather narrow. The neck is high and splayed, with plain rim. Between the body and the neck there is an encircling ring in relief. The entire body is covered with unbordered, encircling hatchings alternating in two directions. The neck has vertical lines on the outside. H. 25.0 cm. (Pl. XXVI, Fig. 195).
146. Cylindrical alabaster column. (Pl. XXVI, Fig. 195).
147. Fragments of a vessel similar to 148.

Shaft C

Grave C III S¹ (+0.30 m.)

669. Grey, polished, oval bottle with flat base. The body is convexly curved with slightly depressed shoulder. The neck is slightly tapering with a splayed rim. H. 15.5 cm. (Pl. XXVI, Fig. 196).
668. Grey, polished, oval bottle with flat base. Similar to 669. H. 21.0 cm. (Pl. XXVI, Fig. 196).
670. Grey, polished, patterned, carinated jar with flat base, conical belly and shoulder of the same height. The belly-line is angularly accentuated. The rim is out-turned and below the rim there are two holes for suspension. The shoulder is patterned with vertically bordered hatching alternating in two directions. H. 10.8. (Pl. XXVI, Fig. 196).
Fragments of red pottery.

Grave C III S² (+0.35 m.)

1171. Black-grey, polished bowl with flat base, convexly curved, but with an angular line at the middle of the body and the upper part slightly tapering. H. 6.9 cm. Diam. 12.5 cm. (Pl. XXVI, Fig. 197).

1172. Black-grey, polished, shallow, carinated bowl with out-turned, almost flat rim and flat base. The lower part of the body is conical and splayed, the upper part conical and tapering. H. 5.0 cm. Diam. 10.8 cm. (Pl. XXVI, Fig. 197).

Grave C II S²¹ (+0.70 m.)

1140. Black-grey, polished, »hemispherical» bowl with flat base, similar to 1171. H. 6.9 cm. Diam. 13.3 cm. (Pl. XXVI, Fig. 198).

Grave C II S¹⁵ (+0.75 m.)

639. Black-grey, polished, bellied, squat jar with flattened base, very short neck and widened rim. H. 13.8 cm. Diam. 17.8 cm. (Pl. XXVII, Fig. 199).
640. Black-grey, polished, hemispherical bowl. H. 6.03 cm. Diam. 10.7 cm. (Pl. XXVII, Fig. 199).
641. Little red- and- black painted, squat jar with flattened base, round-bellied and slightly carinated. Low, splayed neck. Decorated with vertical and narrow lines. On the inside of the neck three groups of short lines, three in each group. H. 6.9 cm. Diam. 7.8 cm. (Pl. XXVII, Fig. 199).

Grave C II S²² (+0.80 m.)

1141. Almost hemispherical, black-grey, polished bowl with flattened base, angular belly-line and plain rim. Upper part almost cylindrical. H. 5.4 cm. Diam. 9.3 cm. (Pl. XXVII, Fig. 200).

Grave C II S²⁰ (+0.95 m.)

1083. Almost hemispherical, grey-black, polished bowl with flattened base, slightly angular belly-line. Upper part almost cylindrical but tapering. H. 6.75 cm. Diam. 13.1 cm (Pl. XXVII, Fig. 201).

Grave C II S¹⁴ (+1.00 m.)

671. A squat, bellied, almost globular jar of black-grey polished ware with flattened base and wide, low, splayed neck. H. 14.0 cm. Diam. 17.0 cm. (Pl. XXVII, Fig. 202).
672. Black-grey, polished, hemispherical bowl, not quite regular. H. 4.75 cm. Diam. 10.1 x 9.5 cm. (Pl. XXVII, Fig. 202).

673. Little squat, bellied jar of black-grey ware. Wide mouth with broad, flat rim. Decorated on the shoulder with 21 parallel, horizontal, incised or rather grooved lines. H. 8.7 cm. Diam. 11.0 cm. (Pl. XXVII, Fig. 202).
— A fragmentary cylinder of coarse red ware could not be preserved.
— White stone (lost).

Grave C II S¹⁹ (+1.30 m.)

952. The shoulder-part of a curved (globular or oval), polished vessel with relatively short, splayed neck with plain rim. Diam. 12.15 cm. (Pl. XXVII, Fig. 203).
951. Grey, curved (egg-shaped), patterned bottle with flat base. The belly slightly concave, the shoulder convexly curved. The neck is slightly concave with out-turned rim. The shoulder and the upper part of the belly are decorated with bordered, encircling hatchings alternating in two directions. H. 16.3 cm. (Pl. XXVII, Fig. 203).
949. Grey, polished, patterned, curved bottle, similar to 951. H. 17.5 cm. (Pl. XXVII, Fig. 203).
950. Grey, polished, cylindrical bowl. The body is provided with two vertical string-hole projections below the plain rim. H. 8.8 cm. Diam. 11 cm. (Pl. XXVII, Fig. 203).

Grave C II S¹⁶ (+1.60 m.)

819. Black-grey, polished, patterned, carinated jar with flat base, concave belly, conical shoulder and string-hole projections. The neck is short and cylindrical with a wide, out-turned, almost flat rim. The shoulder is covered with four encircling bordered bands, two latticed alternating with two zigzag bands. H. 11.8 cm. (Pl. XXVIII, Fig. 204).
817. Grey, polished, patterned, curved (egg-shaped) bottle with flat base, concave belly and convexly curved shoulder. The neck is cylindrical and provided with a wide, out-turned, almost flat rim. The shoulder and the upper part of the belly are decorated with six bordered, encircling hatchings alternating in two directions. H. 16.2 cm. (Pl. XXVIII, Fig. 204).

818. Grey, polished, patterned, cylindrical bowl. All the body is decorated with four bordered, encircling bands with hatchings alternating in two directions. H. 9.0 cm. Diam. 14.0 cm. (Pl. XXVIII, Fig. 204).
820. Grey, polished, patterned, carinated jar with flat base, concave belly and «conical» shoulder. The rim is wide and out-turned. The shoulder is decorated with four encircling, bordered hatchings, alternating in two directions. H. 13.0 cm. (Pl. XXVIII, Fig. 204).

Grave C II S¹⁷ (+1.60 m.)

821. Brownish-grey, polished, oval jar with string-hole projections and flat base. Very short neck, tapering with an out-turned rim. H. 10.65 cm. (Pl. XXVIII, Fig. 205).
824. Greyish black, polished, «curved» bottle with flat base, slightly concave belly and convex-conical shoulder. The neck is concave with a wide, splayed rim. H. 16.2 cm (Pl. XXVIII, Fig. 205).
822. Greyish-black, polished, patterned, pseudo-cylindrical bowl with vertical string-hole projections and concave sides. The body is covered with five bordered, encircling bands, three hatched bands alternating with two wider zigzag bands. H. 10.2 cm. Diam. 11.5 × 12.2 cm. (Pl. XXVIII, Fig. 205).
823. Greyish-black, polished, curved bottle with flat base, slightly concave belly, convex and depressed shoulder. The neck is concave with wide, splayed rim. H. 15.5 cm. (Pl. XXVIII, Fig. 205).

Grave C II S¹⁰ (+1.10 m.)

540. Black, polished, deep bowl with flat base, convexly curved and slightly splayed body. H. 10.2 cm. Diam. 11.2 × 11.8 cm. (Pl. XXVIII, Fig. 206).
339. Greyish-black, polished, patterned, carinated (biconical) jar with flat base, concave belly and shoulder. The rim is wide, out-turned, almost flat and pierced by two holes for suspension. The shoulder is decorated with latticed bands alternating with groups of vertical lines; the groups of lines are broader than the latticed bands. The upperside of the rim is decorated with latticed lines. H. 16.35 cm. (Pl. XXVIII, Fig. 206).

Grave C II S¹¹ (+1.60 m.)

— Deep bowl, fragmentary.

Grave C II S¹² (+2.40 m.)

536. Greyish-black, polished, high, cylindrical bowl with plain rim provided with an open beak-shaped spout. H. 11.0 cm. Diam. 8.5 cm. (Pl. XXVIII, Fig. 207).
538. Grey, polished, oval, «curved» bottle with flat base and sloping shoulder. The neck is very short with a wide, splayed rim. H. 11.5 cm. (Pl. XXVIII, Fig. 207).
537. Greyish-black, polished, patterned, carinated jar with concave low belly and convexly curved, high shoulder. On the upper part of the shoulder two string-hole projections. Short, concave neck with a splayed rim. On the shoulder traces of polished pattern. H. 10.1 cm. (Pl. XXVIII, Fig. 207).

Grave C II S¹³ (+2.40 m.)

635. Greyish-black, polished, oval jar with two string-hole projections. The neck is short and almost cylindrical with splayed rim. H. 12.1 cm. (Pl. XXVIII, Fig. 208).
634. Greyish-black, curved bottle with flat base, slightly concave belly and convexly curved shoulder. The neck almost cylindrical with a wide, almost flat rim. The shoulder and the upper part of the belly are decorated with five bordered, encircling hatchings, alternating in two directions. H. 17.0 cm. (Pl. XXVIII, Fig. 208).
636. Greyish-black, squat, curved jar with two string-hole projections and a flat base. The belly is narrow and slightly concave, the shoulder convexly curved and somewhat depressed. The neck is cylindrical with out-turned, wide and flat rim. H. 10.0 cm. (Pl. XXVIII, Fig. 208).

Grave C II S⁶ (+2.75 m.)

503. Greyish-black, polished, cylindrical bowl with short open spout. H. 9.3 cm. Diam. 8.75 cm. (Pl. XXIX, Fig. 209).
501. Greyish-black, polished, patterned, curved bottle with flat base, slightly concave belly and convexly curved shoulder. The neck is slightly splayed with a wide rim. The shoulder and the upper part of the

belly are decorated with bordered encircling hatchings alternating in two directions. The remaining part of the belly is covered with polished, oblique lines. H. 16.4 cm. (Pl. XXIX, Fig. 209).

502. Greyish-black, polished, patterned, carinated jar with concave belly, convex shoulder and string-hole projections. The neck is cylindrical with a wide splayed rim. The shoulder is decorated with bordered, encircling, latticed and zigzag bands. H. 12.55 cm. (Pl. XXIX, Fig. 209).

Grave C II S⁷ (+2.75 cm.)

543. Greyish-black, polished, carinated jar with flat base, concave belly, «conical» shoulder and string-hole projections. Cylindrical neck with a wide, out-turned rim. The shoulder is covered with five bordered, encircling bands, three hatched and two zigzag bands. H. 10.8 cm. (Pl. XXIX, Fig. 210).
541. Greyish-black, polished, patterned, pseudo-cylindrical bowl with concave body and two vertical string-hole projections close below the rim. The body is decorated with five bordered encircling bands, three hatchings alternating with two zigzag bands. H. 10.7 cm. Diam. 13.1 cm. (Pl. XXIX, Fig. 210).
542. Greyish-black, polished, «curved» bottle with flat base and oval, almost globular body. The neck is slightly concave with wide, splayed rim. H. 12.3 cm. (Pl. XXIX, Fig. 210).

Grave C II S⁸ (+2.75 m.)

504. Greyish-black, polished, «curved» bottle with flat base and symmetrically oval body. The neck is cylindrical-concave with a wide, splayed rim. H. 14.3 cm. (Pl. XXIX, Fig. 211).
505. Grey, polished, cylindrical bowl with flat base and plain rim. H. 7.7 cm. Diam. 9.9 cm. (Pl. XXIX, Fig. 211).

Grave C II S³ b (+4.60 m.)

427. Greyish-black, patterned, cylindrical bowl. The body is covered with three latticed bands alternating with three zigzag bands. H. 9.3 cm. Diam. 13.3 cm. (Pl. XXIX, Fig. 212).

Grave C II S² (+6.15—+6.30 m.)

- 265. Brownish-grey, polished, globular, handled jug with flat base, relatively high neck, wide and slightly splayed. The handle reaches from the middle of the shoulder to the rim. H. 19.0 cm. (Pl. XXX, Fig. 213).
- 267. Black, polished, almost hemispherical bowl with flat base and long, wide spout, blunt at the end. H. 11.35 cm. Diam. 20.1 cm. (Pl. XXX, Fig. 213).
- 266. Brownish-grey, polished, squat, slightly carinated jar with flat base. Convexly curved body with angular line at the belly. The neck is very wide and slightly splayed with a splayed rim. H. 21.15 cm. (Pl. XXX, Fig. 213).
- 268. Cooking pot of mat-red coarse ware with flat base, oval body, short, slightly concave neck and a handle running from the upper part of the shoulder to the rim. H. 11.1 cm. (Pl. XXX, Fig. 213).
- 264. Greyish-black, polished, squat, slightly carinated jar with flat base and wide neck, splayed with a plain rim. H. 17.55 cm. Diam. 20.15 cm. (Pl. XXX, Fig. 213).
- 245. Faience bead in the shape of a truncated cone decorated with meander-shaped hooks. H. 1.55 cm. Diam. 3.3 cm. (Fig. 605 a, b)
- 269. Nine faience beads, two of them of pyramid - and seven of rectangular shape. (Fig. 601—604).
- 272. Fortyfive beads of faience. (Fig. 601—604).
- 273. Four beads of glass. (Fig. 601—604)
- 274. Spindle-whorl or bead of light-red limestone. (Fig. 601—604).
- 275. Mussel shell used as a bead (*Didacna trigonoides*).
- 276. Little faience bottle. (Fig. 607).
- 270. Fragments of copper pin.
- 271. Bronze pin with almost cubical head. (Fig. 651).

Shaft D

Grave D III S² (+1.80 m.)

- 499. Black-on-red ware bowl with flat base, almost cylindrical, slightly tapering and slightly convexly curved body. The rim is short and out-turned. The body is decorated with eight bordered, vertical, latticed bands, painted in black colour.

The inside of the rim is decorated with three groups of vertical lines (8, 9 and 10) painted in black colour too. The colour of the clay is red. H. 6,8 cm. Diam. 6,0 cm. (Pl. XXX, Fig. 214).

- 477. Greyish-black, polished, carinated jar with flat base, «conical» and very depressed belly, high and slightly tapering shoulder, almost cylindrical. Wide opening provided with an out-turned rim. H. 7,6 cm. Diam. 9,4 cm. (Pl. XXX, Fig. 214).
- 475. Black, polished, high-stemmed vessel with two concentric cups. The foot is very splayed and the stem is high and cylindrical, altogether hollow from below. The two cups are almost conical, the peripheral one more splayed than the middle one. H. 16,0 cm. Diam. 16,25 cm. Diam. of the inner cup 9,4 cm. (Pl. XXX, Fig. 214).
- 476. Greyish-black, polished, carinated jar with narrow, flat base, conical and very depressed belly, slightly convex, somewhat tapering and rather high shoulder. The opening is wide and provided with an out-turned rim. H. 6,5 cm. Diam. 8,6 cm. (Pl. XXX, Fig. 214).

Grave D III S¹ (+2.30 m.)

- 405. Brownish-grey, polished, relatively deep bowl with flat base, slightly splayed and convexly curved. H. 5,9 cm. Diam. 8,5 cm. (Pl. XXX, Fig. 215).

Shaft E

Grave E III S² (+0.10 m.)

- 1306. Grey, polished, squat jar with flat base and convexly curved body, somewhat irregular. H. 5,3 cm. (Pl. XXX, Fig. 216).
- 1308. Brownish-black, polished bowl with flat base and an angular line at the lower part of the body. This lower part is «conical» and very splayed, the upper part is slightly splayed, almost cylindrical. H. 5,55 cm. Diam. 10,15—10,35 cm. (Pl. XXX, Fig. 216).
- 1310. Greyish-black, polished, squat jar with flat base and convexly curved, symmetrical body. The opening is wide with a splayed rim. H. 8,2 cm. (Pl. XXX, Fig. 216).

1307. Greyish-black, polished bowl, similar to 1308. H. 4,7 cm. Diam. 9,4—10,0 cm. (Pl. XXX, Fig. 216).
1309. Greyish-black, carinated bowl with narrow flat base and out-turned rim. The lower part of the body is «conical», almost horizontal, and the upper part is slightly tapering, almost cylindrical. H. 1,9 cm. Diam. 5,9 cm. (Pl. XXX, Fig. 216).

Grave E III S⁵ (+1 m.)

1490. Greyish-black, polished, squat, slightly carinated jar with flat base, almost conical and slightly depressed belly, rather high and convexly curved shoulder. Very wide and out-turned rim. H. 9,3 cm. (Pl. XXX, Fig. 217).
1489. Greyish-black, polished bowl with narrow, flat base and an angular line at the lower part of the body. Similar to 1308 but the upper part of the body slightly curved. H. 5,8 cm. Diam. 10,3 cm. (Pl. XXX, Fig. 217).

Grave E III S¹ (+1.20 m.)

1215. Greyish-black, polished, squat jar with flat base, almost globular body with slightly depressed shoulder. The rim is wide and splayed, somewhat raised. H. 11,3 cm. (Pl. XXX, Fig. 218).
1214. Greyish-black, polished, hemispherical bowl with narrow flat base. H. 4,8 cm. Diam. 9,35 cm. (Pl. XXX, Fig. 218).

Grave E III S⁴ (+1.40 m.)

1396. Brownish-grey, oval-globular jar with flat base and a short, splayed and almost raised rim. The ware is sooted; probably used as a cooking-pot. H. 11,8 cm. Diam. 13,9 cm. (Pl. XXXI, Fig. 219).
1398. Greyish-black, polished, squat jar with a narrow flat base and an accentuated, rounded belly-line. The rim is splayed and somewhat raised. H. 11,75 cm. (Pl. XXXI, Fig. 219).
1397. Greyish-black, polished, hemispherical bowl with very narrow flat base. H. 5,3 cm. Diam. 9,0—9,6 cm. (Pl. XXXI, Fig. 219).

Grave E III S¹⁰ (+1.50 m.)

1737. Black, knobbed-and-ribbed, squat, slightly carinated jar with flat base and almost biconical body. The rim is splayed. The shoulder is decorated with three encircling rows of knobs bordered by two encircling ribbed lines. H. 6,7 cm. (Pl. XXXI, Fig. 220).
1736. Black, polished, squat jar with flat base and convexly curved body. The rim is wide, splayed and somewhat raised. H. 14,9 cm. Diam. 15,3 cm. (Pl. XXXI, Fig. 220).
1735. Black, polished, hemispherical bowl with narrow, flat base. H. 5,5 cm. Diam. 10,25 cm. (Pl. XXXI, Fig. 220).
1738. Spiral copper bracelet. Diam. 4,1 × 4,25 cm. (Fig. 639).

Grave E III S⁸ (+2.10 m.)

1732. Black-on-red painted, squat bottle with narrow, flattened base, convexly curved body and high neck, slightly splayed with a wide, splayed, almost flat rim. The body is covered with narrow, vertical lines at equal distances, crossed by a few narrow, encircling lines. Inside the rim are three groups of vertical lines. H. 10,5 cm. Diam. 9,5 cm. (Pl. XXXI, Fig. 221).
1733. Spiral copper bracelet. 4,4 × 4,1 cm. (Fig. 638).

Grave E III S⁷ (+2.20 m.)

1730. Black-on-red painted, squat, slightly carinated jar with flat base, almost conical belly and comparatively high, convexly curved shoulder. The body is decorated with black, painted, narrow vertical lines. Below the rim and on the edge of the rim there are encircling lines, and inside the rim are groups of vertical lines, all painted in black. H. 9,7 cm. Diam. 11,2 cm. (Pl. XXXI, Fig. 222).
1729. Black, polished, squat, slightly carinated jar with flat base, convexly curved body, belly depressed, the shoulder comparatively high. H. 11,5 cm. Diam. 14,7 cm. (Pl. XXXI, Fig. 222).
1728. Black, polished, hemispherical bowl with narrow flat base. H. 5,5 cm. Diam. 9,9 cm. (Pl. XXXI, Fig. 222).
1730. Fragments of copper-sheath, perhaps from a vessel.

Grave E III S⁸ (+2.35 m.)

1699. Greyish-black, polished, patterned, «cylindrical» bowl with slightly convex body. Covered with five bordered encircling bands with hatchings alternating in two directions. On the base are drawn burnished lines, obliquely radiating from a square center. H. 7.45 cm. Diam. 12.0 cm. (Pl. XXXI, Fig. 223).
1705. Greyish-black, polished «chalice» with conical cup and a splayed foot terminating in a short, cylindrical stem. The foot has a flat base, and the vessel is hollow from above down to the flat base. H. 14.6 cm. Diam. of cup 17.8 × 17.6 cm. Diam. of foot 8.0 cm. (Pl. XXXI, Fig. 223).
1701. Greyish-black, polished, patterned, jar-shaped, carinated and spouted miniature-jug. The belly is slightly concave and very depressed, the shoulder high and conical. The spout is shaped like a point-ended beak. Decorated with three bordered, encircling, latticed bands alternating with two zigzag bands. H. 4.4 cm. Diam. 4.6 cm. (Pl. XXXI, Fig. 223, a).
1707. Greyish-black, convexly curved, slightly carinated, handled jug with flat base and an almost cylindrical, slightly tapering neck with wide, out-turned rim. H. 10.85 cm. Diam. 9.85 cm. Length of handle 5.85 cm. (Pl. XXXI, Fig. 223).
1704. Greyish-black, polished, patterned fruit-stand with plate-shaped cup. The foot is conically splayed, high stemmed and hollow from below. The stem is hollow for half its length and then forms a «bead» or a capital, terminating like a narrow, cylindrical neck, on which the cup is resting. The cup is almost plain and provided with a short, vertically raised rim. The foot and the lower part of the stem are patterned with 9 bordered, encircling, latticed bands alternating with encircling zigzag bands. The outside of the rim has an encircling zigzag band. H. 25.3 cm. Diam. of the cup 25.7 cm. (Pl. XXXI, Fig. 223).
1706. Greyish-black, patterned, carinated, spouted jug with flat, concave belly and almost conical high shoulder. The spout is long and narrow, placed on the lower part of the shoulder and provided with three strainer holes. The neck rather high and cylindrical with a wide

splayed rim. The shoulder is covered with six bordered, encircling bands with hatchings alternating in two directions. H. 14.5 cm. (Pl. XXXI, Fig. 223).

1702. Greyish-black, polished miniature chalice with splayed foot, hollowed from below and provided with a high, narrow stem. The cup is hemispherical with a flat, out-turned rim. H. 10.5 cm. (Pl. XXXI, Fig. 223).
1700. Black-on-red painted, slightly carinated miniature jar of red clay with flat base. The belly is almost conical and depressed, the shoulder slightly convex and rather high. The rim is missing. The body is covered on red slip with painted, black, vertical lines at equal distances. Inside the opening there are traces of groups of painted, vertical lines. H. 4.9 cm. (Pl. XXXI, Fig. 223 b).
1708. Greyish-black, polished, «curved» bottle with flat base and oval body. The neck is «cylindrical» but slightly concave with a splayed rim. H. 12.5 cm. (Pl. XXXI, Fig. 224).
1703. Two small silverrings of spiral shape. Diam. 1.9 × 2.15 cm. and 2.0 cm. (Fig. 636).

Grave E II S¹⁹ (+3.00 m.)

1695. Greyish-black, polished, patterned, cylindrical bowl with flat base and slightly splayed body. Close below the rim are two vertical stringhole projections. The body is covered with seven bordered, encircling bands with hatchings alternating in two directions. H. 11.0 cm. Diam. 11.0 cm. (Pl. XXXII, Fig. 225).
1693. Greyish-black, polished, patterned, carinated jar with flat base, concave belly and high, slightly convex «conical» shoulder. The rim is wide and out-turned. The shoulder is decorated with five bordered, encircling bands with hatchings alternating in two directions. H. 15.5 cm. (Pl. XXXII, Fig. 225).
1694. Greyish-black, polished, patterned, carinated and spouted jug, similar to n:o 1706, but decorated with five bands or zones. H. 13.8 cm. (Pl. XXXII, Fig. 225).
1696. Greyish-black, polished, patterned, cylindrical bowl decorated with four bordered encircling, latticed bands. H. 7.5 cm. Diam. 11.7 cm. (Pl. XXXII, Fig. 225).

Grave E II S¹² (+3.00 m.)

1075. Greyish-black, polished, patterned, »pseudo-cylindrical» bowl with flat base and somewhat concave body. Below the rim two vertical string-hole projections. Decorated with four bordered, encircling, latticed bands alternating with three zigzag bands. H. 14.2 cm. (Pl. XXXII, Fig. 226).
1074. Greyish-black, polished, »curved» bottle with flat base. A short concave neck with a wide splayed rim. H. 14.8 cm. (Pl. XXXII, Fig. 226).

Grave E II S¹¹ (+3.20 m.)

1032. Greyish-black, polished, pseudo-cylindrical bowl with somewhat concave body and vertical string-hole projections close below the rim. H. 10.7 cm. Diam. 13.2 cm. (Pl. XXXII, Fig. 227).
1035. Greyish-black, polished, patterned, »curved» bottle with flat base, concave belly and convex shoulder. The neck is almost cylindrical with splayed rim. The shoulder and the upper part of the belly are decorated with five bordered, encircling bands with hatchings alternating in two directions. H. 16.0 cm. (Pl. XXXII, Fig. 227).
1034. Greyish-black, polished, patterned, carinated jar with flat base, concave belly and almost »conical» shoulder. The shoulder and the uppermost part of the belly are decorated with six bordered, encircling bands with hatchings alternating in two directions. H. 18.8 cm. (Pl. XXXII, Fig. 227).
1033. Greyish-black, polished, patterned, carinated jar with flat base, concave belly, »conical» somewhat convex shoulder and two vertical string-hole projections. Short, almost cylindrical neck with a wide, splayed rim. The shoulder and the uppermost part of the belly are decorated with bordered encircling bands, three with hatchings, alternating in two directions, and one zigzag band. H. 11.8 cm. (Pl. XXXII, Fig. 227).

Grave E II S¹⁰ (+3.80 m.)

1030. Greyish-black, polished, oval-globular jar with flat base and two vertical string-hole projections. The neck is short and cylindrical, the belly slightly concave. H. 10.9 cm. (Pl. XXXII, Fig. 228).

1031. Brownish-grey, polished, patterned, cylindrical bowl with slightly splayed body. The body is covered with four bordered encircling latticed bands of alternating size. H. 10.75 cm. Diam. 16.3 cm. (Pl. XXXII, Fig. 228).
1029. Greyish-black, polished, patterned, »curved» bottle with flat base, almost conical belly and slightly convex shoulder. The neck is short and cylindrical with a wide splayed rim. The shoulder and the upper part of the belly are decorated with four bordered, encircling bands with hatchings alternating in two directions. H. 12.55 cm. (Pl. XXXII, Fig. 228).

Grave E II S⁸ (+4.00 m.)

953. Grey, polished, biconical, carinated jar with flat base, high, almost conical shoulder and slightly concave belly. The rim is very wide and splayed. H. 12.65 cm. (Pl. XXXII, Fig. 229).
954. Greyish-black, polished, cylindrical bowl with two vertical string-hole projections. H. 8.7 cm. Diam. 10.3 cm.

Grave E II S¹⁶ (+4.00 m.)

1512. Greyish-black, polished, patterned lid in the shape of a truncated cone with a vertical bow-shaped handle on the middle of the horizontal upper side. The conical side is decorated with three bordered encircling bands, two with hatchings surrounding one zigzag band. H. 5.25 cm. Lower diam. 15.15 cm. Upper diam. 11.6 cm. (Pl. XXXII, Fig. 230).
1513. Greyish-black, polished, patterned, carinated jar with flat base, slightly concave belly and almost conical shoulder. The rim is wide and out-turned. The shoulder and the uppermost part of the belly are decorated with five bordered, encircling bands with hatchings alternating in two directions. H. 32.0 cm. (Pl. XXXII, Fig. 230).
1514. Greyish-black, polished, carinated jar with flat base, concave belly and shoulder, both of about the same height. The bellyline very accentuated and angular. Close below the wide and out-turned, almost flat rim the body is pierced with two holes for suspension. The shoulder is decorated with a few, rather narrow, vertical, latticed bands. H. 15.1 cm. (Pl. XXXII, Fig. 230).

Grave E II S¹⁷ (+4.40 m.)

1518. Greyish-black, polished, »deep» bowl. H. 10.15 cm. Diam. 10.9 cm. (Pl. XXXIII, Fig. 231).
1516. Greyish-black, polished, patterned, curved, almost globular bottle with flat base and a short neck with plain rim. The shoulder and the upper part of the belly are decorated with six bordered, encircling bands with hatchings alternating in two directions. H. 23.45 cm. Diam. 21.8 cm. H. of neck 3.2 cm. Diam. of neck 5.6 cm. (Pl. XXXIII, Fig. 231).
1517. Greyish-black, polished, oval-globular jar with flat base and two vertical string-hole projections. The neck is slightly concave with a plain rim. H. 10.75 cm. (Pl. XXXIII, Fig. 231).

Grave E II S⁸ (+4.65 m.)

878. Greyish-black, polished, almost globular jar with flat base, two vertical string-hole projections and a short neck, slightly concave. H. 7.9 cm. Diam. 8.8 cm. (Pl. XXXIII, Fig. 232).
877. Greyish-black, polished, »deep» bowl or goblet. H. 15.0 cm. Diam. 14.6 cm. Diam. of base 5.65 cm. (Pl. XXXIII, Fig. 232). — Fragments of a »deep» bowl. Diam. 12.2 × 12.8 cm.

Grave E II S⁹ (+4.70 m.)

986. Greyish-black, polished, biconical, carinated jar with flat base, concave belly and almost conical shoulder. The rim is wide and out-turned. H. 15.2 cm. (Pl. XXXIII, Fig. 233).
985. Brownish-grey, polished, symmetrically oval jar with flat base and wide, splayed rim. H. 14.3 cm. (Pl. XXXIII, Fig. 233).
987. Greyish-black, polished, patterned, cylindrical bowl. The body is decorated with three bordered, encircling bands, two with hatchings surrounding one zigzag band. H. 6.25 cm. Diam. 9.1 cm. (Pl. XXXIII, Fig. 233).

Grave E II S¹³ (+5.00 m.)

1431. Greyish-black, polished, coupled vase consisting of three globular bottles with flat bases. The bottles are communicat-

ing and one of them is provided with a tubular tapering spout. The necks are slightly concave. A very high tripartite handle from each of the rims unites the three bottles. H. of the bottles 8.3 cm. H. of the vase with the handle 13.0 cm. (Pl. XXXIII, Fig. 234).

1430. Greyish-black, polished, coupled vase consisting of three globular bottles, similar to 1431, but the handle more rounded. H. 10.0 cm., with the handle 17.0 cm. (Pl. XXXIII, Fig. 234).

1429. Grey, polished, bottle-shaped, globular, spouted jug with flat base and a tubular tapering spout, emanating from the middle of the shoulder. The neck is short and concave with a plain rim. H. 10.15 cm. (Pl. XXXIII, Fig. 234).

Grave E II S⁵ (+5.45 m.)

749. Greyish-black, polished, bottle-shaped, globular, spouted jug with flat base. The spout is long, tubular and tapering, placed on the middle of the shoulder. The neck is short and cylindrical with a splayed rim. H. 11 cm. Diam. 10.8 cm. Length of spout 5.6 cm. (Pl. XXXIII, Fig. 235).
751. Greyish-black, polished, bottleshaped, oval-globular, spouted jug, similar to 749. H. 12.6 cm. Diam. 10.9 cm. Length of spout 4.7 cm. (Pl. XXXIII, Fig. 235).
750. Greyish-black, polished, bottle-shaped, globular, spouted jug, similar to 749. H. 10.8 cm. Diam. 10.5 cm. Length of spout 3.75 cm. (Pl. XXXIII, Fig. 235).

Grave E II S³ (+6.10 m.)

620. Greyish-black, polished, globular bottle with flat base. The body is convexly curved and symmetrically squat. The neck is cylindrical with an out-turned, flat rim. H. 9.8 cm. (Pl. XXXIV, Fig. 236).
623. Grey, polished, footed chalice. The foot is splayed and hollow from below, provided with a very short cylindrical stem. The cup is almost conical with a plain rim. H. 13.65 cm. Diam. of the cup 16.0 cm. (Pl. XXXIV, Fig. 236).
619. Greyish-black, polished, plate-shaped lid with a handle-projection in the middle of the upper concave side. The under side convex with a narrow flat »base». H. 2.75 cm. Diam. 9.9 cm. (Pl. XXXIV, Fig. 236).

617. Greyish-black, polished, patterned, globular jar with flat base and low cylindrical neck with a wide, out-turned and flat rim. All the body is covered with bordered encircling bands, latticed ones alternating with zigzag bands. H. 16.3 cm. (Pl. XXXIV, Fig. 236).
625. Grey, polished, bottle-shaped, globular, spouted jug, similar to 749 and others, but with a higher neck. H. 11.8 cm. H. of neck 2.9 cm. Length of spout 6.1 cm. (Pl. XXXIV, Fig. 236).
618. Grey, polished «fruit-stand» with very splayed, conical cup. The cylindrical stem and the splayed foot are hollow. H. 17.75 cm. Diam. of the cup 26.5 cm (Pl. XXXIV, Fig. 236).
622. Brownish-black, polished, patterned, biconical, carinated jar with flat base. The belly is slightly concave, the shoulder conical. The rim is out-turned and almost flat. Close below the rim the body is pierced with two holes for suspension or fastening of lid. The shoulder is covered with seven bordered, encircling bands, latticement alternating with zigzag bands. H. 12.7 cm. Diam. 13.35 cm. (Pl. XXXIV, Fig. 236).
624. Brownish-grey, polished, «curved», oval bottle with flat base and rather high neck slightly splayed with a plain rim. The body is covered with latticement. H. 18.7 cm. (Pl. XXXIV, Fig. 236).
626. Black, polished, patterned, square miniature bottle with a flat square base, forming a right angle with the body. The neck is relatively high, tapering with a wide rim pierced with two by two vertical holes. The body is decorated with irregular, horizontal zigzag lines. H. 6.1 cm. W. 3.7 cm. (Pl. XXXIV, Fig. 236).
627. Yellow-white cylindrical alabaster vessel with out-turned flat rim. H. 9.0 cm. Diam. 9.3 cm (Pl. XXXIV, Fig. 236).
621. Yellowish stone bead or biconical spindle-whorl. Diam. 2.75 cm H. 2.3 cm. (Fig. 618).
628. Copper awl, square in section. L. 6.6 cm.
629. More than 80 beads of alabaster (?) and three of bone. — Fragments of cooking pot and animal bones. (Fig. 599).

Grave E II S¹ (+6.20 m.)

663. Greyish-black, polished, patterned, carinated, biconical jar with flat base, somewhat concave belly and shoulder,

out-turned and flat rim. Close below the rim, the body is pierced with two holes for suspension. A corniformed handle, hollow from above, is fixed along the shoulder and terminates as a tapering projection. The shoulder is covered with zigzag bands. H. 10.0 cm. (Pl. XXXIV, Fig. 237 a).

665. Brownish-black, polished, patterned, almost globular bottle with high neck and flat base. The shoulder and the upper part of the belly are decorated with bordered, encircling bands, hatchings alternating with zigzag bands. H. 14.7 cm. (Pl. XXXIV, Fig. 237).
664. Grey, polished, coupled vase consisting of three globular bottles with a very high, tripartite handle similar to nos. 1431 and 1430. The top of the handle is pierced with a hole, possibly for suspending. H. of the bottle 9.2 cm. H. of the vase with the handle 17.1 cm. (Pl. XXXIV, Fig. 237).
665. 4 beads of stone.
— Fragment of a red vessel.

Grave E II S² (+6.30 m.)

666. Greyish-black, footed chalice. The foot is conical and hollow, the cup somewhat deformed, almost conical and with a plain rim. H. 13.4 cm. Diam. of the cup 16.5 × 17.3 cm. (Pl. XXXIV, Fig. 238).
667. Brownish-grey, polished, globular bottle with round base. The neck is short and slightly tapering with a very wide, splayed rim. H. 12.0 cm. Diam. 10.75 cm. (Pl. XXXIV, Fig. 238).

Grave E II S⁴ (+6.40 m.)

630. Greyish-black, polished, oval jar with flat base and wide and splayed neck. H. 12.9 cm. Diam. 10. cm. (Pl. XXXIV, Fig. 239).
631. Grey, polished, oval jar with flat base. The neck is missing. H. (now) 14.8 cm. Diam. 11.5 cm. (Pl. XXXIV, Fig. 239).

Shaft F.

Grave F III S²¹ (+0.05 m.)

1656. Black, polished bowl with an angular line at the middle of the convexly curved body. The base is flattened. H. 4.5 cm. Diam. 9.3 cm. (Pl. XXXV, Fig. 240).

1657. Black, polished, carinated jar with flat base, a convexly curved belly and a low, flat base, a convexly curved belly and a low, conical shoulder. The opening is wide and provided with an out-turned, somewhat raised rim. H. 7.4 cm. Diam. 9.4 cm. (Pl. XXXV, Fig. 240).

Grave F III S¹⁹ (+0.35 m.)

1647. Black, polished bowl with an angular line at the middle of the almost convex body and a flat base. H. 7.5 cm. Diam. 11.5 cm. (Pl. XXXV, Fig. 241).

Grave F III S¹⁸ (H. +0.65 cm.)

1646. Black, polished bowl with flat base and an angular line at the middle part of the body, of which the lower part is almost conical, the upper part cylindrical. H. 7.1 cm. Diam. 12.3 cm. (Pl. XXXV, Fig. 242).

Grave F III S⁹ (+2.00 m.)

1436. Black, polished, squat jar with flat base and a convexly curved body. The rim is splayed and somewhat raised. H. 13.5 cm. (Pl. XXXV, Fig. 243).
1437. Black, hemispherical bowl of ribbed ware with narrow, flat base. The upper part of the body is decorated with three encircling, ribbed lines. H. 5.15 cm. Diam. 13.9 cm. (Pl. XXXV, Fig. 243).

Grave F III S² (+2.20 m.)

1401. Black, polished, hemispherical bowl with narrow, flattened base. H. 4.2 cm. Diam. 9.0 cm. (Pl. XXXV, Fig. 244).
1402. Black, polished, squat jar with flat base and accentuated but rounded bellyline. The neck is comparatively high, cylindrical and with a plain rim. H. 8.5 cm. Diam. 10.5 cm. (Pl. XXXV, Fig. 244).
1435. 60 beads (3 of copper, the others of white or black lime-stone). (Figs. 597 and 619).

Grave F III S³—S⁷ (+2.05—+2.25 m.)

Fragments of vessels etc. Amongst the fragments there are two stems of «fruitstands» and pieces of appertaining bowls, perhaps braziers in coarse, mat

red ware, sherds of kettles in brown, coarse ware, sherds of black-on-red painted ware and of grey polished, patterned and non-patterned ware (among them three necks of different height, five out-turned rims, 12 bottoms, two pieces of a low hemispherical bowl, 2 handles), a copper-pin, flint-flakes etc.

Grave F III S¹³ (+2.25 m.)

1626. Greyish-black, polished, cylindrical bowl with flat base and slightly splayed body. Close below the rim are two vertical string-hole projections. H. 10.1 cm. Diam. 11.6 cm (Pl. XXXV, Fig. 245).
1628. Greyish-black, polished, «curved» bottle with flat base and a short, tapering neck, with a wide, out-turned rim. H. 14.0 cm. Diam. 13.0 cm. (Pl. XXXV, Fig. 245).
1627. Greyish-black, oval-globular jar with string-hole projections. The base is flat, the belly concave and slightly depressed, the shoulder convexly curved. The neck is low, concave, raised with a plain rim. H. 9.1 cm. Diam. 9.3 cm. (Pl. XXXV, Fig. 245).
— Fragments of coarse ware.

Grave F III S¹⁶ (+2.25—+2.30 m.)

1629. Black, polished, cylindrical bowl with two vertical string-hole projections close below the rim. H. 9.35 cm. Diam. 11.05 cm. (Pl. XXXV, Fig. 246).
1630. Flint flake.

Grave F III S¹ (+2.95 m.)

1326. Black-on-red, painted, squat, slightly carinated jar with flattened base. Very short and splayed neck. The body with its red slip is decorated with painted, black, vertical lines at equal distance. H. 4.35 cm. Diam. 5.0 cm. (Pl. XXXV, Fig. 247).
1323. Black, polished, squat jar with narrow flat base and a convexly curved body. The belly-line is slightly accentuated. Very short neck with a wide, splayed rim. H. 11.9 cm. Diam. 14.5 cm. (Pl. XXXV, Fig. 247).
1324. Brownish-black, hemispherical bowl with narrow, flattened base. H. 5.6 cm. Diam. 10.0 cm. (Pl. XXXV, Fig. 247).

1325. Black, polished, squat and slightly carinated miniature jar with flat base. The belly is conical and depressed, the shoulder slightly convex, the belly-line angularly accentuated. The rim is splayed. H. 4.8 cm. Diam. 6.5 cm. (Pl. XXXV, Fig. 247).

—1327. Four beads of carnelian.

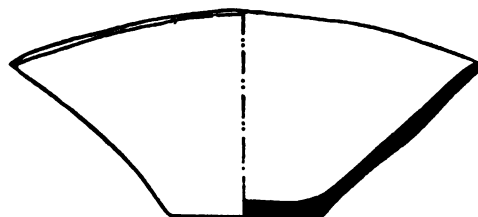


Fig. 248 No. 1217

Grave F II S⁵ (+4.00 m.)

11217. Greyish-black, polished, oblong, concavely splayed bowl with flat base, forming an ellipsis. The opening is concave on the short sides and convex on the long sides. The rim is plain and obliquely cut off. H. 9.5—10.5 cm. Diam. 22.3 × 25.2 cm. (Pl. XXXVI, Fig. 248).
— Fragments of a curved bottle with neck and of a red-brown cooking pot.

Grave F II S⁴ (+4.55 cm)

1127. Black, polished, rounded, bottle-shaped jug with spout and flat base. The spout is placed on the middle of the shoulder, is partly closed and terminates horizontally open, beak-shaped. The neck is rather short and concave. H. 17.6 cm. Diam. 17.9 cm. Pl. XXXVI, Fig. 249).
1126 b. Grey, polished, «biconical» jar with flat base. The belly is conical and slightly depressed, the shoulder high, slightly convex, almost conical. The belly line is accentuated and rounded, the rim wide and out-turned. H. c:a 25.0 cm. Diam. c:a 27.0 cm. Pl. XXXVI, Fig. 249 a).
1126 a. Greyish-black, polished, patterned lid, shaped like a truncated cone with handle, vertically placed on the middle of the horizontal upper side. The sides are decorated with three encircling, bordered bands, two with hatchings surrounding one zigzag band. H. 5.35 cm. Diam. min. 10.7 cm. (Pl. XXXVI, Fig. 249).
1130. Black, polished, patterned, carinated jar with flat base, concave and depressed belly, slightly convex, almost conical and rather high shoulder. The bellyline is angularly accentuated, the rim out-turned and almost flat, pierced with two holes for suspension. The shoulder is decorated with encircling lines at rather narrow distance. H. 8.95 cm. Diam. 8.85 cm. (Pl. XXXVI, Fig. 249).

1128. Black, polished, globular bottle with flat base. The neck is cylindrical with a splayed rim. H. 9.0 cm. Diam. 8.65 cm. (Pl. XXXVI, Fig. 249).
1129. Black, polished, globular bottle with round base. The neck is cylindrical with out-turned rim, pierced with two holes for suspension. H. 5.95 cm. Diam. 5.8 cm. (Pl. XXXVI, Fig. 249).

Grave F II S³ (+5.20 m.)

1000. Greyish-black, patterned, stemmed miniature bottle with a horizontally pierced stopper. The body is almost globular, the foot is splayed and hollow from below and provided with a short stem. The remaining part of the neck is cylindrical. The body is covered with unbordered encircling hatchings alternating in two directions (vertical zigzag lines). H. 7.9 cm. (Pl. XXXVI, Fig. 250).
999. Black, polished, bottle-shaped, globular, spouted and handled jug with flat base. The tubular, tapering spout is placed on the middle of the shoulder. The handle runs from the middle of the shoulder, opposite the spout, to the rim. The neck is low, cylindrical with a splayed rim. H. 10.5 cm (Pl. XXXVI, Fig. 250).
998. Black, fragmentary, curved vessel with neck. Diam. ca. 14.5 cm. Diam. of neck 5.8 cm. Diam. of bottom 5.6 cm.
— A bead.

Grave F II S¹ (+6.80 m.)

752. Greyish-black, polished, deep, almost cylindrical bowl with plain broken rim. H. 26.5 cm. Diam. 14.6 cm (Pl. XXXVI, Fig. 251).
753. Cylindrical alabaster vase with splayed base and rim. H. 7.0 cm. Diam. 8.5 cm. (Pl. XXXVI, Fig. 251).
754. Biconical spindle-whorl or bead of alabaster. Diam. 3.3 cm. H. 2.35 cm.

Shaft G

Grave G III S⁵ (+0.45 m.)

1697. Brownish-black, squat, slightly carinated jar with flat base and accentuated belly-line. The neck is wide and out-turned, forming a right angle with the shoulder. H. 19.0 cm. Diam. 22.2 cm. (Pl. XXXVII, Fig. 252).
1698. Brownish-black, polished, relatively «deep» bowl with flat base H. 7.85 cm. Diam. 11.2 cm. (Pl. XXXVII, Fig. 252).
- Fragments of a black hemispherical(?) bowl lying in 1698.

Grave G III S³ (+1.40—+1.45 m.)

1572. Greyish-black, low, carinated bowl with out-turned rim and flattened base showing traces of textile when at first found. The lower part of the body is conical, very splayed, almost horizontal. The upper part is slightly tapering, almost cylindrical. The rim is wide, out-turned and flat. H. 2.8 cm. Diam. 9.5 cm. (Pl. XXXVII, Fig. 253).
1571. Black, polished, squat, slightly carinated jar with flat base. The rim is very wide and out-turned. H. 9.5 cm. Diam. 11.85 cm. (Pl. XXXVII, Fig. 253).
1573. Black, polished bowl with an angular line at the middle of the body. The base is flattened, the lower part of the body splayed and conical, the upper part cylindrical. The rim is plain. H. 6.1 cm. Diam. 9.7 cm. (Pl. XXXVII, Fig. 253).
- Sherd of black soothy vessel, probably coarse ware.

Grave G III S² (+2.0 m.)

1426. Black, polished bowl with an angular line at the middle of the body. Flat base. The lower part of the body is conical and splayed, the upper part cylindrical. H. 5.8 cm. Diam. 9.8 cm. (Pl. XXXVII, Fig. 254).
1427. Mat-red coarse ware bowl with flat and somewhat raised base. The body is convexly curved and splayed. The rim is short, splayed and flat. H. 5.8 cm. Diam. 14.5 cm. (Pl. XXXVII, Fig. 254).
1428. Fragments of copper pin and copper bracelet.
- Black and white stone-beads.

Grave G III S¹ (+2.25—+2.35 m.)

1433. Black, polished, patterned, cylindrical bowl with slightly splayed body, covered with five bordered, encircling bands, three latticed alternating with two zigzag bands. H. 9.8 cm. Diam. 12.15 cm. (Pl. XXXVII, Fig. 255).
1434. Greyish-black, polished, patterned, curved bottle with flat base. The belly is slightly concave, the shoulder convexly curved, both rather high. The neck is slightly splayed with a splayed rim. The shoulder is decorated with bordered, encircling bands with hatchings alternating in two directions. H. 18.5 cm. (Pl. XXXVII, Fig. 255).
- Fragments of patterned biconical jar.
- 1434 a. Conical spindle-whorl or bead of green stone. (Fig. 617).

Grave G II S¹⁹ (+2.60 m.)

1742. Black, polished, squat jar with flat base. The body is convexly curved, the belly rather high, the shoulder depressed. The neck is slightly concave, not high, with a wide, somewhat raised rim. H. 10.0 cm. (Pl. XXXVII, Fig. 256).
- 1742 a. Grey, polished bowl with relatively wide base and convexly curved, slightly splayed body. H. 4.5 cm. Diam. 9.3 cm.

Grave G II S¹⁸ (+2.75 m.)

1365. Black, polished, squat jar with flat base and convexly curved body. The belly-line is accentuated and rounded, the rim wide, out-turned and somewhat raised. H. 10.5 cm. (Pl. XXXVIII, Fig. 257).
1364. Black, polished, hemispherical bowl with narrow, flattened base. H. 5.0 cm. Diam. 13.4 cm. (Pl. XXXVIII Fig. 257).

Grave G II S¹⁶ (+3.35 m.)

1302. Grey, polished, «deep» bowl with flat base. The body is rather deep and narrow and very slightly splayed. H. 13.65 cm. Diam. 9.0×9.9 cm. (Pl. XXXVII, Fig. 258).

Grave G II S¹³ (+3.70 m.)

1246. Grey, polished, cylindrical bowl. H. 8.7 cm. Upper diam. 8.4×9 cm. Base diam. 8.3×8.5 cm. (Pl. XXXVIII, Fig. 259).

1244. Grey, polished, patterned, curved bottle with flat base, slightly concave belly and convexly curved, depressed shoulder. The neck is tapering and provided with a wide, out-turned, almost flat rim. The shoulder and the upper part of the belly are covered with bordered, encircling bands with hatchings alternating in two directions. H. 15.0 cm. Diam. 11.5 cm. (Pl. XXXVIII, Fig. 259).
1245. Greyish-black, polished, oval-globular jar with string-hole projections. The neck is short and tapering with a splayed rim. H. 8.5 cm. Diam. 8.6 cm. (Pl. XXXVIII, Fig. 259).

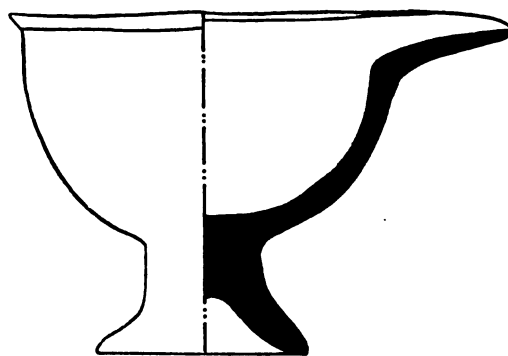


Fig. 264 No. 1076

Grave G II S¹⁷ (+3.70 m.)

1332. Greyish-black, polished, patterned, cylindrical bowl. The body is slightly splayed and covered with five bordered encircling bands with hatchings alternating in two directions. H. 8.0 cm. Diam. 11.3 cm. (Pl. XXXVIII, Fig. 260).
1331. Black, polished, patterned, carinated «biconical» jar with flat base, concave belly and «conical» shoulder. The rim is very wide and out-turned. The shoulder is covered with five bordered, encircling bands with hatchings, alternating in two directions. H. 14.2 cm. (Pl. XXXVIII, Fig. 260).
1330. Black, polished, patterned, curved bottle with flat base, conical and rather high belly, convexly curved and slightly depressed shoulder. The neck is cylindrical and provided with a wide, out-turned rim. The shoulder is covered with five bordered, encircling bands with hatchings alternating in two directions. H. 14.2 cm. (Pl. XXXVIII, Fig. 260).
1329. Brownish-grey, polished, patterned, cylindrical bowl, covered with five bordered, encircling bands, three hatchings alternating with two zigzag bands. H. 8.9 cm. Diam. 14.7 × 14.2 cm. (Pl. XXXVIII, Fig. 260).

Grave G II S¹² (+3.90 m.)

1247. Black, polished, curved bottle with flat base. The body is almost globular with a slightly accentuated, rounded belly line. The neck is cylindrical with a wide, out-turned rim. H. 14.2 cm. (Pl. XXXVIII, Fig. 261).

Grave G II S¹¹ (+3.95 m.)

1189. Black, polished, curved bottle with flat base, concave belly and convexly curved shoulder. The belly-line is accentuated and rounded, the neck short and concave with a wide, out-turned rim. H. 12.5 cm. (Pl. XXXVIII, Fig. 262).
1190. Greyish black, polished, convexly curved and relatively high bowl, slightly tapering upwards. H. 9.2 cm. Diam. 10.2 cm. (Pl. XXXVIII, Fig. 262).

Grave G II S⁹ (+4.80 m.)

1081. Black, polished, bottle-shaped, squat globular, spouted and handled jug with flat base. The neck is short and cylindrical, provided with a wide, out-turned, almost flat rim. The spout is tubular, tapering towards the end and placed on the middle of the shoulder. The handle runs from the rim to the middle of the shoulder opposite the spout. H. 10.1 cm. (Pl. XXXIX, Fig. 263).
1080. Black, polished bottle-shaped, almost globular, spouted and handled jug with flat base, similar to 1081. H. 10.8 cm. (Pl. XXXIX, Fig. 263).
1082. Greyish black, polished, almost globular bottle with round base. The neck is cylindrical, provided with an out-turned, flat rim. H. 8.5 cm. (Pl. XXXIX, Fig. 263).

Grave G II S⁸ (+5.0 m.)

1077. Grey, polished, globular bottle with round base. The almost cylindrical neck is slightly splayed and provided with a wide splayed rim. H. 11.0 cm. (Pl. XXXVIII, Fig. 264).

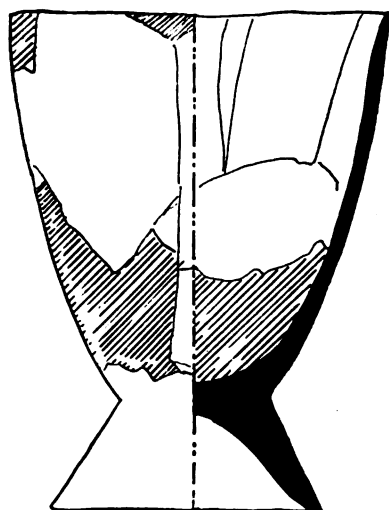


Fig 265 no. 1079.

1076. Grey, polished, footed chalice. The foot is splayed and hollow, provided with a short stem. The cup is hemispherical with out-turned rim and an open, beak-shaped spout. H. 9.0 cm. Diam. 10.6 cm. (Pl. XXXVIII, Fig. 264).
1078. Greyish-black, stemmed, globular miniature bottle with cylindrical neck, pierced with two holes for suspension and provided with a splayed, almost flat rim. The foot is splayed and stemmed, hollow from below. H. 10.0 cm. (Pl. XXXVIII, Fig. 264).
1079. Greyish-black footed chalice with splayed, almost conical foot, hollow from below. The cup is rather deep, convexly curved and slightly splayed with plain rim. H. 12.5 cm. Diam. 9.8 cm. (Pl. XXXIX, Fig. 265).

Grave G II S³ (+5.90 m.)

988. Greyish-black, polished, patterned, symmetrically oval bottle with flat, narrow base. The neck is rather high and splayed with a plain rim. Below the neck there is an encircling line in relief. The body is covered with encircling hatchings, alternating in two directions and forming vertical zigzag bands. H. 23.8 cm. (Pl. XXXIX, Fig. 266).
989. Grey, once polished(?), globular bottle with flat base. The rim is now missing. The surface is rough, probably it has been polished, however. Diam. 9.0 cm. (Pl. XXXIX, Fig. 266).

Grave G II S² (+6.0 m.)

835. Black, polished, incised, bottle-shaped, globular, spouted jug with tubular spout, placed on the middle of the shoulder. The base is flat and somewhat raised. The neck is concave and splayed with a plain rim. On the upper part of the shoulder there are two vertical string-hole projections, viz. one between the spout and the neck and the other opposite. On the shoulder, between the both string-hole projections there is an incised zigzag band, bordered by encircling lines. H. 13.0 cm. (Pl. XXXIX, Fig. 267).
834. Black, polished, patterned, almost globular jar with flat base and a short, cylindrical neck, provided with a splayed flat rim. The body is covered with 6 encircling bands with burnished hatchings alternating in two directions. H. 9.6 cm. Diam. 9.5 cm. (Pl. XXXIX, Fig. 267).
836. Fragments of an alabaster-plate on foot. Diam. 20.7 cm. (Fig. 587).
837. Nine fragments of no less than three bone pins, partly ornamented. (Fig. 622).
838. Four earrings and three fragments of copper. (Fig. 642).
839. Two beads of green stone. (Fig. 617).
840. Flower-shaped ornament of white-green faience. (Fig. 608).

Grave G II S⁷ (+6.00 m.)

1004. Greyish-black, polished, patterned female effigy vessel with flat, ellipsoidal base. The body is trapezoid, the neck high with concave sides, the upper part with a modelled nose. Two modelled breasts. The body seems to be patterned with vertical, bordered hatchings alternating in two directions. H. 14.5 cm. (Pl. XXXIX, Fig. 268).
1003. «Conical» alabaster bowl, with flat base, veined and of rose colour. Hurt at the mouth. H. 8.1 cm. Upper diam. 9.1 cm. Base diam. 4.5 cm. (Pl. XXXIX, Fig. 268.)

Grave G II S¹ (+6.50 m.)

746. Black, polished, wide, almost hemispherical, wide- and long-spouted bowl with flat base. H. 14.0 cm. Diam. 19.5 cm. (Pl. XL, Fig. 269).

747. Mat-red, coarse ware cooking pot with flat base and a handle, running from the upper part of the shoulder to the rim. The body is convexly curved, the neck very short and slightly concave. The lower part of the body is sooty. H. 8.0 cm. Diam. 9.1 cm. (Pl. XL, Fig. 269).
748. Black, polished, hemispherical, wide, short-spouted bowl with flat base. H. 12.4 cm. Diam. 20.7 cm. (Pl. XL, Fig. 269).
- A copper ring.

Grave G II S^{1a} (+6.50 m.)

841. Red, polished, wide, hemispherical, short-spouted bowl with flat base. The spout is very short and open. H. 11.2 cm. Diam. 23.75 cm. (Pl. XL, Fig. 270).
846. Mat-red, coarse ware cooking pot with flat base and oval body. The neck is short and slightly concave with a plain rim. The handle runs from the upper part of the shoulder to the rim. The lower part of the body is sooty. H. 14.2 cm. Diam. 10.8 cm. (Pl. XL, Fig. 270).

Grave G II S⁴ (+6.60 m.)

984. Mat-red, coarse ware cooking pot with flat base and globular body. The neck is slightly concave with a plain rim. The handle as on 846 and 747. The lower part of the body is sooty. H. 8.0 cm. Diam. 9.9 cm. (Pl. XL, Fig. 271).
983. Black, polished, handled jug with flat base and high, narrow, slightly tapering neck. The rim is shaped like a funnel. The body is convexly curved and squat. The handle runs from the upper part of the shoulder to the lower part of the neck. H. 14.6 cm. (Pl. XL, Fig. 271).
958. Yellow-white, cylindrical bead of vitrified matter. L. 2.75 cm. (Fig. 271).
959. Finger ring of copper covered with a thin gold sheet. Diam. 1.5 cm. (Fig. 271).

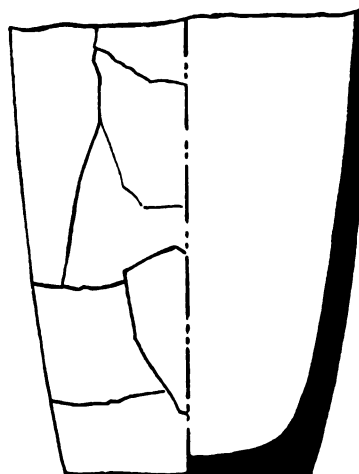


Fig. 274 no. 1770

Shaft H

Grave H II S² (+5.65 m.)

1762. Black, polished, globular bottle with round base and cylindrical neck. The rim is wide and splayed. H. 12.5 cm. (Pl. XL, Fig. 272).
1763. Cylindrical bead of green faience. L. 4.5 cm. (Fig. 610).

Grave H II S¹ (+5.70 m.)

1760. Mat-red (brown), coarse ware cooking pot with flat base, almost globular body and a handle running from the rim to the upper part of the shoulder. The neck is short and slightly concave with a plain rim. The lower part of the body is sooty. H. 12.1 cm. Diam. 13.1 cm. (Pl. XL, Fig. 273).
1761. Black, polished, wide, hemispherical, wide- and long-spouted bowl with flat base. H. 11.9 cm. Diam. 18.4 cm. (Pl. XL, Fig. 273).

Grave H II S³ (+5.70 m.)

1770. Greyish-black, deep and narrow, almost cylindrical goblet with flat base, probably fragmentary. H. 9.00 cm. Diam. 7.0 cm. (Pl. XL, Fig. 274).

PREHISTORIC POTTERY

The most important finds in Shah Tepé comprised, as was the case in so many other finding-places, ceramic products. The majority of the clay vessels had been left in graves and were of very moderate proportions. Similar clay vessels were found, however, in some cases outside the graves. Other, smaller, vessels were of diverging types. Among the most common finds in the settlement were large storage jars, often in the form of fragments.

A. *Painted pottery.* (From graves and from the settlement).

After surface treatment it is possible to classify the earthenware finds as painted or unpainted vessels. The former are generally painted in two colours (slip + pattern), seldom in one. In the latter case the object has only been covered with a *red*, thin-washed layer of clay (slip, engobe). The earthenware objects in two colours have first been covered with such a »slip» and a pattern in another colour has then been added. In Shah Tepé the two-coloured earthenware is nearly always provided with a red background upon which a pattern in black or dark brown, sometimes in other tints, such as faint violet, has been added. Various shades of red occur, from deep red to shades of brown and buff.

An exception is a fragmentary piece, which was found in the deepest layer, stratum III. The ground is in this case a greyish yellow-white, and the superposed pattern is dark brown (Fig. 299).

The painted pottery is well-washed, with scarcely any admixture of gravel; it is hand-made and well burnt. The earthenware in the small, (rarely in the big) vessels is sometimes not burnt right through, being at least in parts somewhat greyish in the cross-section of broken parts, though most of the pieces have been burnt to brick-red right through. This pottery is not, however, so sounding as for example the »tripolie ceramic» from Schipenitz in Bukowina. The earthenware is most often reddish yellow inside, sometimes greyish yellow to reddish brown. If and where there has been any turning on a wheel, this seems to have been of the most primitive kind, perhaps with the use of a loose disc and only in connection with the mouth of the vessel.

On the other hand, however, there seems to have been a very careful smoothing or polishing with instruments of wood, bone or clay, or with a brush; and especially on the inside of the vessels these have left traces of fine parallel lines that one might have been disposed to regard as a proof of turning on a wheel. Sometimes these parallel fields of lines turn at right angles to one another, showing that the instrument has been applied in different directions, and has not been used during a continuous turning on a wheel. The material is generally of very even thickness. In the cross-sections of the fragments one frequently sees bow-shaped lines, following the walls in a vertical direction. They indicate the addition of fresh clay

with the hand, followed by smoothing. On the outside of the bottoms there is no trace of a potter's wheel having been used. The bottoms show in cross-section that a new inner layer has been added and made thicker at the point of transition to the wall. This has then been smoothed over, giving rise to an irregular streaking effect on the inner surface. The broad out-turned edges of the mouth have been added separately and then well smoothed, leaving parallel streaks running longitudinally. In cross-section, especially in the rim of the mouth, but also below this, one sees on both outer and inner walls a kind of coating, a »slip» of up to 2 mm. in thickness and of darker red. The colouring in question was probably caused not alone by the burning.



Fig. 276

During the first period after being taken out of the earth the pottery in Shah Tepé sweated a great deal of salt, a consequence of the salinity characterizing a the soil in the vicinity of the Caspian Sea.

I. *Painted grave pottery* was only sparsely represented in the lower stratum (III) of Shah Tepé. Only 8 such vessels were found in graves, to wit, in A III s³, s⁴, C II s¹⁵, D III s², E III s⁶, s⁷ and s⁸, F III s¹. (See: List of pottery from the graves). As a rule they occurred in each grave as single specimens together with several black or black-grey clay vessels and beads or objects of copper and silver. One of the painted vessels was almost cylindrical in shape (D III s²; Pl. XLI, Fig. 275 Pl. XC); another (E III s⁸; Fig. 221) had a comparatively high and narrow neck with widened rim above the round-bellied body; while the remaining 6 were all of the same round-bellied type, small jars, rather squat and with the rather sharply angular belly-line somewhat below the middle. (C II s¹⁵; Fig. 276). They had low wide necks with spreading mouth. The high-necked bottle measured 10.15 cm. in height, the cylindrical one 6.9 cm., while the other six vessels varied between 4.35 and 9.6 cm. in height and between 5 and 11.2 cm. in diameter. All the vessels were thus very small. The thickness of the earthenware was 3 to 5 mm. Fragments of similar small vessels were found also outside the graves, especially in layers A, B and D. A little sherd with reddish yellow »slip» and grey-brown painted decoration had found its way up as high as A I. It is ornamented with a couple of vine-like figures and two horizontal bands around the mouth (Fig. 277 and Pl. XC). A plant pattern that is in some way reminiscent of the ornamentation of the above sherd is known to me from Tepé Hissar I B.¹

The decoration of these grave-vessels is otherwise very simple and uniform. The ground colour, as has been mentioned, is reddish brown or various shades of

¹ E. SCHMIDT, Excavations at Tepé Hissar, Pl. V, DG 69. 6.5.32.



Fig. 277

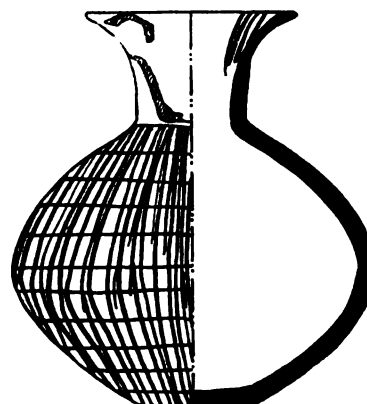


Fig. 278

this. A horizontal black band runs under the neck, whence parallel bands at equal distances from one another run down vertically to the bottom. Transverse bands arranged in groups are also not infrequently to be seen on the inside of the rim of the mouth. In one of the small jars the vertical bands are crossed by horizontal bands which at a fair distance from one another surround the whole jar from the neck to the base. (Fig. 278 and Pl. XC). The vertical bands of the cylindrical vessel are edged with black lines between which is lattice-work. (Fig. 275).

The painted grave-vessels conform as to shape with the black jars that are typical of stratum III, but where the latter are ornamented the pattern is generally of more horizontal type.

II. *The painted pottery from the settlement*, comprising chiefly large storage jars, is made up mostly of fragments, which cannot be fitted together to form whole vessels.¹ It is nevertheless possible, in certain cases, to deduce the form with more or less accuracy from the bends or curves of the fragments, especially the bottoms and the rims of the mouths, and from the thickness of the walls.

As has already been said, all these vessels have been made by hand.

The commonest form is a sort of *bowl*, with flat bottom, and often of enormous proportions. The walls may be rather straight or slightly curved; but the under part generally seems to have formed a cut-off cone (possibly with slightly concave sides), while the upper part has formed a cylinder, gradually widening upwards and having a wide, splayed rim. As a typical specimen may be mentioned the large vessel in E III 7 (Fig. 279, in colour Pl. XCI), which certainly measured originally at least 0.75 m. in height.

Another form is represented by *jars* with flat bottoms, a rounded, sometimes slightly carinated body and wide splayed mouth-rim without real neck. (Fig. 280, in colour Pl. XC).

¹ About 2060 sherds of mostly decorated, painted pottery were preserved. The great majority derived from the walls of the vessels, 90 from the bottom and 100 from the mouth (rims and necks).

Some few *fragments of feet* belonged probably to vessels with »fruit-stand» shape or perhaps to vessels of a type with conoid foot common in Tepé Hissar I A—C.¹ (Fig. 281).

The decoration consists of geometric ornaments, always vertical with the exception of the circle-lines running around the rim and under the neck. The often shiny, polished »slip» is, as has been mentioned, of brown-red, sometimes grey-brown or yellow-brown (buff) colour, while the superposed patterns are painted in black, brown or, occasionally, grey.

The patterns may be classified as:

A. *Vertical Straight lines or bands.*

- 1) Uniform vertical lines at equal distances from one another:
 - a) narrow lines and intervals (Fig. 282 and Pl. XC).
 - b) broad lines and intervals.
- 2) Alternating narrow and broad lines or bands. (Fig. 283 and Pl. XLI).
- 3) Groups of lines:
 - a) groups of lines of equal breadth, arranged as metopes. (Fig. 284).
 - b) groups of narrow and broad lines or bands.

B. *Patterns consisting of undulating lines mostly alternating with vertical straight lines or bands.*

- 1) Vertical straight lines, alternating with vertical rippled, wavy or zig-zag lines. (Fig. 285).
- 2) Vertical bands, alternating with wavy or rippled lines, the bands may alternate with one or several wavy or rippled lines. (Fig. 286 a, b c and Pl. XCI and XLI).
- 3) Vertical bands consisting of rippled lines edged with broader straight lines. (Fig. 287).
- 4) Vertical bands consisting of rippled lines edged with straight, broad lines, alternating with vertical straight or rippled lines. The rippled lines in the band sometimes run into one another, so that they resemble latticed lines or are replaced by such. (Fig. 288 = 289).
- 5) The same as 4) except that the bands alternate with wavy lines. (Pl. XLI, Fig. 289).
- 6) Various compositions with the above-mentioned elements as component parts. (Pl. XCI, Fig. 289 b).
- 7) Vertical bands filled with transverse rippled lines. (Pl. XLI b, Fig. 290).
- 8) Vertical bands filled with transverse rippled lines, alternating with wavy lines. (Pl. XLI, Fig. 291).
- 9) Vertical undulating or zig-zag lines or bands. (Pl. XLI, Fig. 292).

¹ E. SCHMIDT, Excavations at Tepé Hissar, Damghan, Fig. 32 and Pl. III, IV, VIII.



Fig. 281

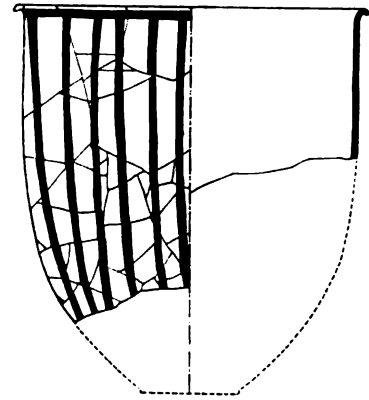


Fig. 282

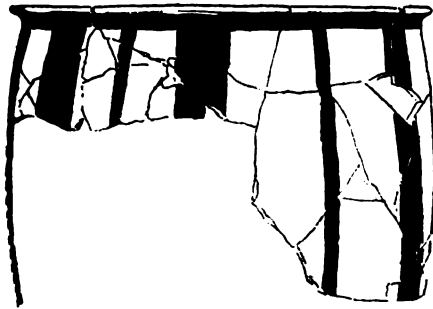


Fig. 283

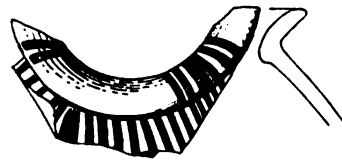


Fig. 284



Fig. 285

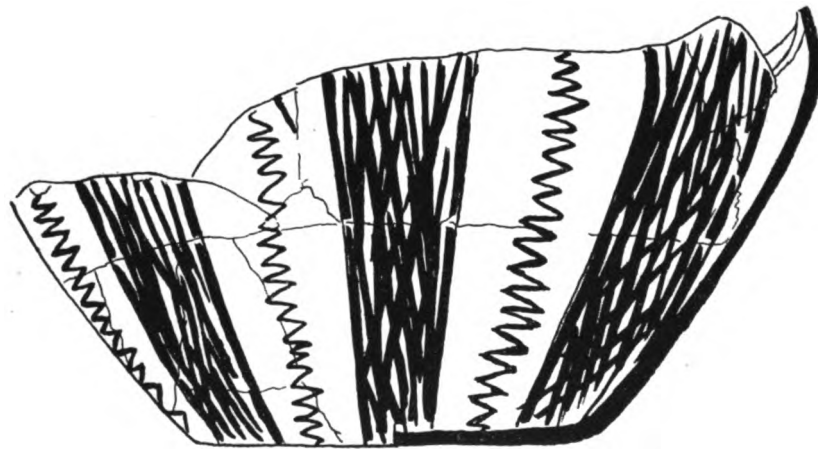


Fig. 286 a

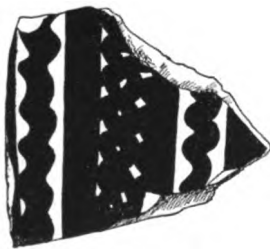


Fig. 286 b



Fig. 287



Fig. 289

- C. *Patterns consisting of lines or bands crossing other lines or bands. Sometimes in combination with other patterns.*
 - 1) In square figures. (Pl. XC, Fig. 293).
 - 2) Lattice work with lozenge-shaped mesh-holes. (Pl. XLI, Fig. 294).
- D. *Vertical bands or lines combined with spots, circles, herring-bone patterns and lozenge-holed lattice work.* Appear in at least 7 different combinations. (Pl. XLII, Figs. 295 a—c, 296, 297; Pl. XC).
- E. *Some diverging patterns*, such as the fragment with plant ornamentation already mentioned (Fig. 277), also a sherd with S-shaped ornament. (Fig. 298).

Painted earthenware of the Shah Tepé type was also found in Tureng Tepé.¹ It consisted, however, only of small sherds, belonging to large vessels. They were most numerous in the bottom layer of the western mound C, but in some cases they were also found higher up, some of them actually on the surface. In and on several of the tepés scattered on the Turkoman steppes similar finds of painted fragments of pottery were made.² Some of the patterns on these seem not to be represented in Shah Tepé. If we now turn to the excavations in Tepé Hissar at Damghan we find the oldest pottery from Hissar I A described as follows: »Hand-made vessels decorated with simple rectilinear or, less frequently, curvilinear designs. Animal patterns are absent. The decoration is dark grey on a brown-red ground.»³ This description seems at first sight to fit the Shah Tepé pottery rather well; but actually there some differences. In Tepé Hissar there are only a few storage vessels, but mostly smaller grave vessels with correspondingly thin walls.⁴ The chief types are bowls and jars mounted on a foot (like a cut-off cone) or semi-round bowls and low cups with flat bottoms. The decoration is not so emphatically vertical. Shah Tepé can show only a few painted clay vessels with foot, while bowl forms related to Tepé Hissar occur in the older black pottery. It is only the earthenware, the colours of the »slip» and the decoration that show quite good agreement in both places, and this agreement extends also to earthenware from Rey and even much farther afield — a point to which I will return later. To judge ceramic relationships simply on the basis of a similarity in plain geometrical

¹ F. R. WULSIN, Excavations at Tureng Tepé, near Asterabad, Pl. XIV C (Supplement to the Bulletin of the American Institute for Persian Art and Archaeology, Vol. II, no. 1 bis, 1932).

² M. BYLIN-ALTHIN, Keramische Funde von den Tepés der Türkmenensteppe (Svenska Orientaliska Sällskapet, Årsbok 1937).

³ E. SCHMIDT, Excavations at Tepé Hissar, p. 40, Philadelphia 1937.

⁴ E. SCHMIDT, Op. cit., p. 36: »In the occupational layer of Level 3, below section 67 of Level 2, two handmade storage vessels occurred. They were roughly semi-oval and decorated with dark gray »ladders» and hourglass figures on red ground. Sherds of such storage vessels, frequently ornamented with such lozenge patterns, seems to occur as late as Hissar IC.» P. 39: »Several broken storage vessels, painted gray on brown-red stood in Room 1 (Level 2).

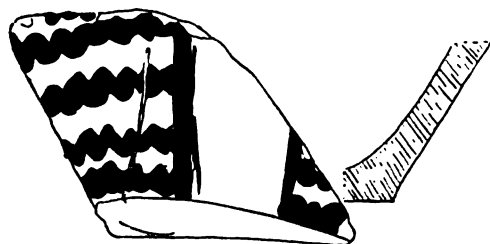


Fig. 290

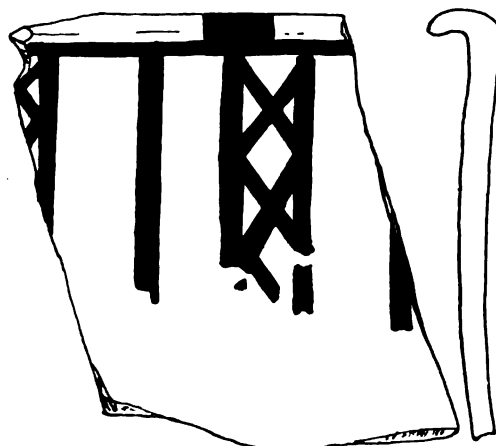


Fig. 294



Fig. 293

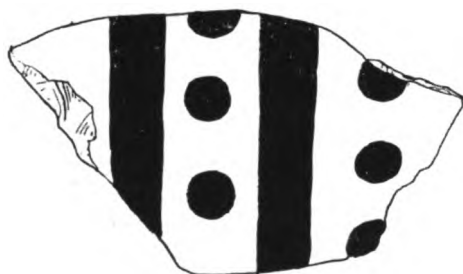


Fig. 295 a

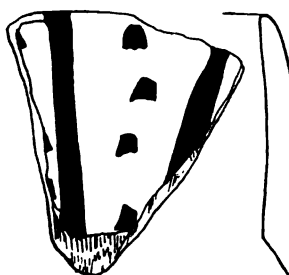


Fig. 295 b



Fig. 295 c

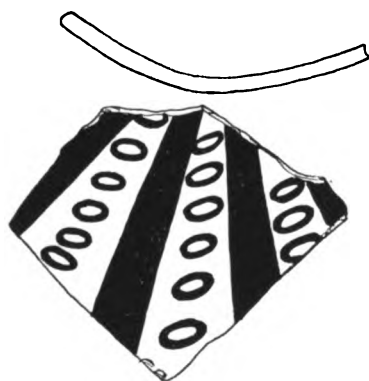


Fig. 296



Fig. 297



Fig. 298

ornamentation, especially when one has only loose sherds to go upon, and even then only in the form of photographs or drawings, is naturally a hazardous undertaking. As long as one is ignorant of the form and colours of the vessel, the arrangement of the decoration and the nature of the earthenware, one is only justified in speaking of a general similarity, though this may be sufficient, in connection with copper or early bronze-age articles, to give an indication of at least distant relationship, e. g. between Iranian ceramic and ceramic from Baluchistan and China on the one hand, and Asia Minor, the Balkan Peninsula and south-western Russia on the other.



Fig. 299 a

Mention has been made above of a sherd from A III which showed a brown painted pattern on a grey-yellow-white ground. One sees a six-pointed rosette with balls at the ends and a couple of bows crowning a head with a beard and under it parts of the body. The animal represents an ibex. (Fig. 299 a, b. Pl. XLII). I consider this sherd to be a part of a cup imported from the highlands and of the kind met with in Tepé Hissar I B—C.¹ (Pl. XLII, Fig. 300). It is possible that it is from such Tepé Hissar ceramic (Tepé Hissar I C) that the «eye-patterns» with ring or rings around the middle part or with only dots have been copied in the Shah Tepé ceramic,² (Fig. 296—297), and it may be that also the pattern with vine-like ornament (Fig. 277) came from the same source (Tepé Hissar I B).³ The same elements of decoration are often met with in Tepé Sialk III.⁴ Rare as they seem to be in the tepés of the turkoman steppe, only a fragment of this kind of pottery was discovered in Tureng tepé. »Cream coloured ware with black painted decoration: We discovered a single sherd of painted pottery black on a buff ground, at elevation 103.25 in the west mound».⁵

B. *Unpainted (black, grey, brown or red-brown) pottery* (mostly from graves)

Most of the clay vessels among the finds are unpainted. They are all hand-made. The cooking utensils are made of slightly burnt earthenware, mixed with grit, while the other vessels have as a rule been made of washed clay that has been burnt sufficiently to give it a certain hardness, though it has not the brick-like consistency of the painted vessels. About 350 to 400 such vessels are whole or almost whole; besides these, large numbers of broken black and grey clay vessels were found. Only a small part of these latter could be taken away, and several tons had to be left behind. The pieces taken comprised chiefly ornamented sherds,

¹ E. SCHMIDT, Excavations at Tepé Hissar, Damghan, 1937, Pl. V, H. 2063, 3464, Pl. VII, H. 4600, X, H. 802, XII, DG. 69.6.7.

² Ibidem, Pl. VIII, H. 3416, H. 3359.

³ Ibidem, Pl. V, DG. 69, 5, 32.

⁴ R. GHIRSHMAN, Fouilles de Sialk, Pl. LXXXV, I., LXXXIX, C 2, LXXX, A 16, etc.

⁵ WULSEN, Op. cit. p. 10. Pl. XIV, a.

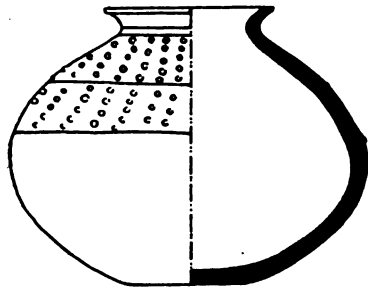


Fig. 301 a

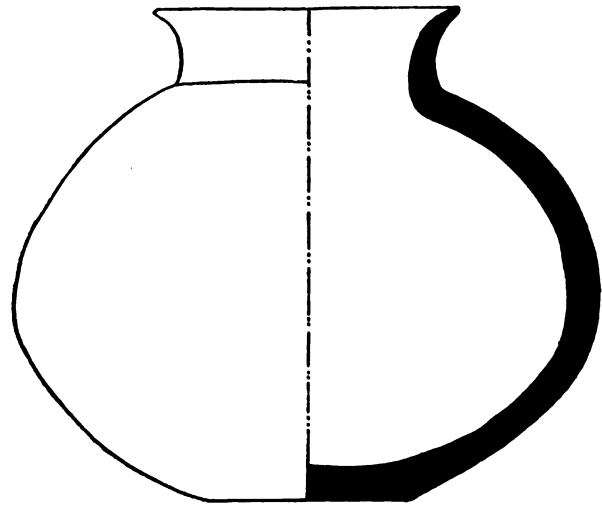


Fig. 301 b

necks, bottoms, spouts, lugs and handles, feet and mouth-rims. If all the loose fragments had been taken home, in spite of the enormous trouble this would have entailed, it would of course have been possible to reconstruct a larger number of vessels than we have actually been able to do. Of most importance for the chronology, however, are the clay vessels that were found together in undisturbed graves, and after these the whole vessels deriving from definite horizons.

Also as regards the grey and black pottery, we find that the grave-vessels are all rather small, while both small vases and large storage vessels were found outside the graves.

In the following, the vessels will be treated in the order in which they appear in different prehistoric strata, thus in four main groups (III, II b, II a² and II a¹).

Stratum III.

The typical vessels in this stratum are low, round-bellied *jars* with low wide necks and splayed mouth-rims (or only such rims), and comparatively low, often hemispherical *bowls*. As a slightly diverging third type one may mention small, low *bowls* with strong profiles and flat base (= group 2 d).

- 1) *Low, bellied, round jars* generally with low, wide necks and splayed rims (sometimes only such rims). They are nearly always wider than they are high. The jars are most often black, sometimes grey, occasionally brown, and as a rule polished and shining. They may be ornamented by the addition of wart-like embellishments (knobs) or with lines either raised in relief or carved in the walls, but such ornamentation is seldom found in the grave-specimens.

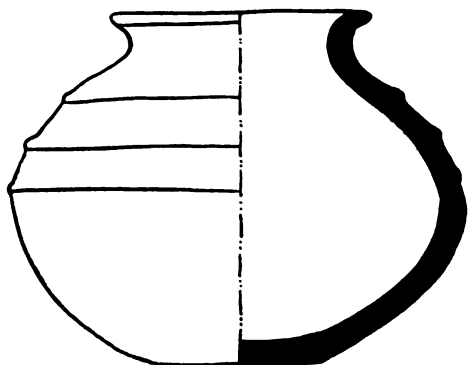


Fig. 302

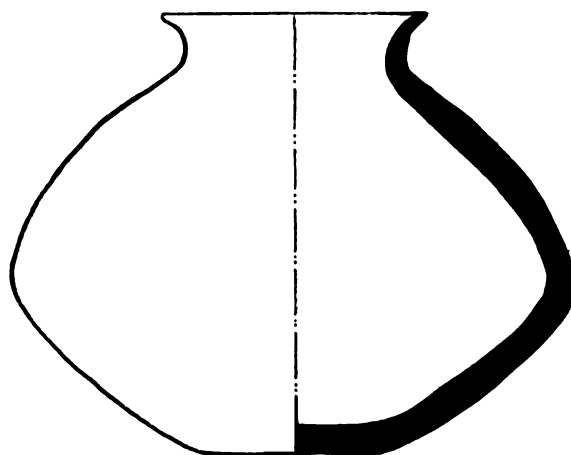


Fig. 303

The following three types are to be distinguished:

- a) *The squat, rounded, curved jar* (Fig. 301 a, b) is the type most commonly occurring. It has a flat or flattened base and a symmetrical, squat body. The rim is usually splayed or out-turned. In one specimen (F III s² no. 1402) the neck is cylindrical with plain rim.

In Stockholm: A III s³ no. 435; A III s⁶ a no. 588; B III s³ no. 948; B II s¹⁹ no. 772; C II s¹⁴ nos. 671, 673; C II s¹⁵ no. 639; F III s² no. 1402¹; F III s⁹ no. 1436; G II s¹⁹ no. 1742².

In Teheran: A III s⁴ nos. 400, 401; A III s⁵ no. 500; B II s¹⁵ no. 758; B II s²⁰ no. 828; B II s²¹ no. 775; E III s¹ no. 1215; E III s² nos. 1306, 1310; E III s⁴ no. 1398³; E III s¹⁰ no. 1736; F III s¹ no. 1323; E II 22, no. 1734; E III 9, no. 1570.

A little jar of this kind (No. 1734, E II 22, Pl. LXXXIX b) was found in the settlement in an exceptionally high level (+3.50 m). The shoulder is decorated with encircling ribbed lines (Fig. 302). A kindred storage jar is E III 8 (Pl. XLII, Fig. 302 a), and we also have a squat miniature jar (E III g no. 1570).

- b) *The squat, slightly carinated jar* (Fig. 303) has a flat or flattened base and a convexly curved, symmetrically squat body with an angular line at the belly. The rim is wide, out-turned or splayed. Only one jar B II s²⁰ no. 825, has a rather high, somewhat narrow, slightly splayed neck with plain rim.

In Stockholm: E II s⁵ no. 1490; E III s⁷ no. 1729; G III s³ no. 1571; G III s⁵ no. 1697; G III, 3 no. 1519.

¹ The neck is higher and more cylindrical.

² Neck a little higher and less wide than is the rule.

³ A cooking utensil of coarse brown ware in the same tomb (E III s⁴ no. 1396) has a more oval form.

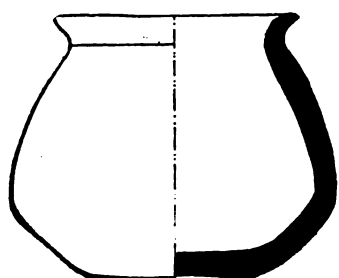


Fig. 304

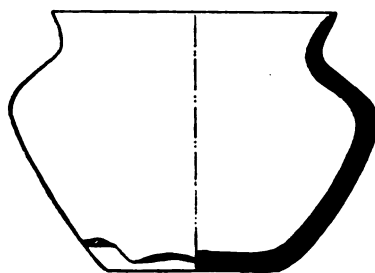


Fig. 305

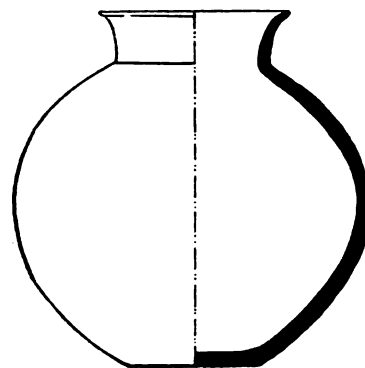


Fig. 306

In Teheran: A III s⁴ no. 434; B II s²⁰ no. 825; E III s¹⁰ no. 1737;
F III s¹ no. 1325; G II s¹⁸ no. 1365.

One specimen was found in the settlement (no. 1519 G III 3) (+1.50 m).

- c) *Three carinated jars of different shapes* (Fig. 304 and 305). They are all rather small, with flat base, angular belly-line and comparatively wide mouth with out-turned, somewhat raised rim. The two jars from the tomb D III s² have conical, very depressed, almost «horizontal» bellies and high, slightly tapering shoulders; one of them is convexly curved, the other is more conical. The third jar, F III s²¹ no. 1657, has a high, convexly curved belly and a very short, depressed, conical shoulder.

In Stockholm: F III s²¹ no. 1657.

In Teheran: D III s² nos. 476, 477.

Besides the above three types we have

- d) *The oval jar* (Fig. 306) represented by two specimens having a flat base and symmetrically oval body. One of these, A III s² no. 308, has a concave neck with plain rim and is higher than it is wide. The other, E III s⁴ no. 1396 has a short, splayed, almost raised rim. It is probably a cooking utensil and is of coarse, blackened brown earthenware. The two jars must be regarded as transition-types.

Here must be added a brownish-grey storage jar from the settlement (no. 1461 G III 1, +2.10), about 43 cms high. The base is flat, the body almost symmetrically oval. The opening is comparatively small, provided with an out-turned rim (Pl. XLII, Fig. 307).

Altogether at least 39 such black, grey or brown squat jars were brought home. Six painted vessels having the same form, as has already been mentioned, were found in graves; and numerous sherds of such vessels, both black and painted, were found in the settlement. The earthenware of which the black jars is made varies in thickness.

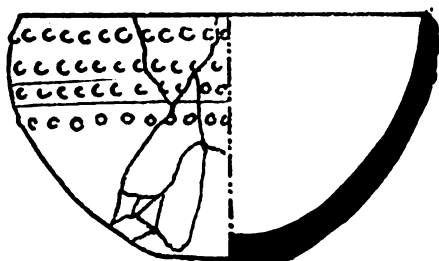


Fig. 308 a

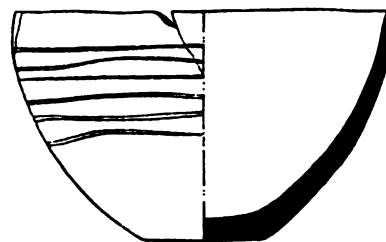


Fig. 308 b

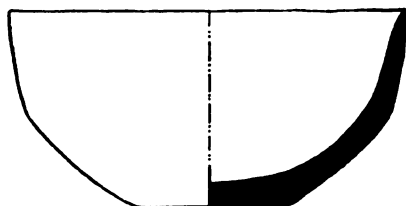


Fig. 309

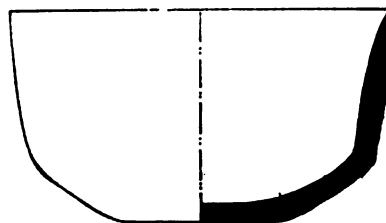


Fig. 310

No. 435 attains a height of 14.95 cm. and a diameter of 17.35 cm.; no. 1657, one of the smallest jars, is only 6.6 cm. in height and 9.4 cm. in width.

2) Bowls:

- a) *The hemispherical bowl* (Fig. 308 a, b) with a narrow flattened base and plain rim is the type most commonly occurring.

In Stockholm: A III s³ no. 437; A III s⁶ a no. 589; B II s¹⁹ no. 773; C II s¹⁴ no. 672; C II s¹⁵ no. 640; E III s⁷ no. 1728; F III s² no. 1401; F III s⁹ no. 1437.

In Teheran: A III s⁴ nos. 433, 436; B II s¹⁵ no. 757; B II s²⁰ no. 827; B II s²¹ no. 750; E III s¹ no. 1214; E III s⁴ no. 1397; E III s¹⁰ no. 1735; F III s¹ no. 1324; G II s¹⁸ no. 1364; (433 is higher than it is wide).

- b) *The bowl with an angular line at the middle of the body* (Fig. 309) has a flat or flattened base. The lower part of the body is slightly curved, almost conical, while the upper part is cylindrical or slightly tapering. The rim is plain.

In Stockholm: C III s² no. 1171; C II s²⁰ no. 1083; C II s²¹ no. 1140; F III s¹⁹ no. 1647; F III s²¹ no. 1656; G III s² no. 1426; G III s³ no. 1573.

In Teheran: A III s⁴ no. 397; C II s²² no. 141; F II s¹⁸ no. 1646.

- c) *The bowl with an angular line at the lower part of the body* (Fig. 310) has a flat or flattened base. The lowest part of the body is splayed,

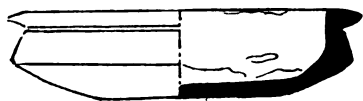


Fig. 311 a

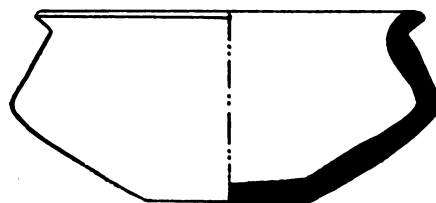


Fig. 311 b

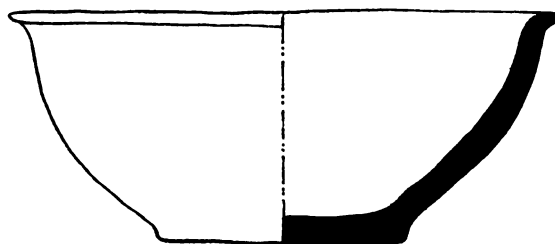


Fig. 312

almost horizontal, forming an angle with the slightly splayed, «conical» upper part of the body. The rim is plain.

In Stockholm: B III s³ no. 947; E III s⁵ no. 1489.

In Teheran: B II s²⁰ no. 826, E III s² nos. 1307, 1308.

- d) *The carinated bowl with out-turned rim* (Fig. 311 a, b) has a flattened base, and the out-turned rim is also almost flat. This bowl is very shallow.

In Stockholm: C III s² no. 1172; G III s³ no. 1572.

In Teheran: A III s⁴ no. 398; E III s² no. 1309.

The above four types of bowl are all comparatively shallow. They occur in the tombs only in conjunction with jars or other bowls in stratum III. One hand-made hemispherical bowl of *red colour* was found in the settlement, probably in F III. As to the size of bowls a—d, the greatest diameter is 13.9 cm., and the smallest 8.55 cm. They vary in height between 4.2 cm. and 7.85 cm. Different sherds were found in the settlement.

- 3) Besides the bowls mentioned above there was one specimen made of *coarse mat-red* clay with a rather rough surface and unpolished (Fig. 312). *The bowl* is almost hemispherical and has a flat, somewhat raised base and convexly curved and splayed body with short, splayed, flat rim. Found in a grave with a bowl from group 2 b at +2.0 m.

In Stockholm: G III s² no. 1427.

Coarse ware is also represented in stratum III by a few sherds from the same tomb, F III s³. The best preserved sherd is a *fragmentary stem*, concavely splayed at both ends. One end has a concave, somewhat smoothed

surface, probably a part of the cup itself. Height: about 15.0 cm. The clay is mat-red and coarse, not well-baked and has a rather rough surface. (See »Coarse ware», Fig. 509).

In Stockholm: F III s³.

These fragments may be compared with a coarse earthenware chalice with conical cup from the settlement (D I 17 no. 321).

Decoration

A few of the jars and bowls mentioned here that were found in graves are provided with decorative additions of various kinds. These are here classified as:

1) knobbed ware, 2) ribbed ware, 3) knobbed and ribbed ware, 4) grooved ware and 5) incised ware.

The same kind of ornamentation is also found on a single clay vessel in stratum II b and on loose sherds from the same stratum in »the settlement». But this ornamentation is really characteristic of stratum III just as »the burnished decoration» is typical of stratum II and must therefore be treated in connection with the ceramic of this stratum.

A. From the graves:

1) Knobbed ware.

There is only one vessel in this category, viz. a *hemispherical bowl* from tomb A III s⁶ a no. 589. (Figs. 167 and 308). The knobs appear to have been made by pushing a pin into the wet clay. When the pin was withdrawn, a knob-like trace remained, with a hole in the centre. The decoration consists of four rows of closely placed knobs encircling the upper part of the body. All the knobs are of about the same size.

2) Ribbed ware.

The only specimen of ribbed ware is a *hemispherical bowl* from tomb F III s⁹ no. 1437 (Pl. XXXV, Fig. 243). The base is flattened, almost round. The relief pattern consists of 3 ribbed lines encircling the upper part of the body. They are parallel and carefully drawn at equal distances from one another.

3) Knobbed and ribbed ware.

There are only *two specimens* of knobbed and ribbed ware from the tombs, viz. *the jars* A III s⁶ a no. 588 and E III s¹⁰ no. 1737. (Figs. 168, 301 and 220). The former belongs to the squat, convexly curved type, the latter to the squat, slightly carinated type. The decoration consists of knobs in various patterns bordered by ribbed lines. The jar E III s¹⁰ has

three encircling rows of knobs bordered by two encircling ribbed lines. On the jar A III s⁶ a the knobs form oblique, irregular lines between two encircling ribbed lines.

4) *Grooved ware.*

This ware is represented by only one specimen in the tombs, viz. a *squat jar* C II s¹⁴ no. 673 (Fig. 202). The surface of the belly is rather rough, a feature which was not to be observed on other vessels belonging to the old grey polished ware. The decoration consists of grooved lines on the middle of the shoulder forming an encircling band. They are of the same thickness and are placed at equal distances from one another. They often constitute actual spirals.

5) *Incised ware.*

We have two specimens of incised ware, viz. two bowls from the same tomb A III s⁴ nos. 436 and 433 (Figs, 170 now in Teheran and 308 b). This tomb contained, besides these specimens, four jars and two bowls of early grey polished ware. The incised lines are shallow and of varying thickness. The *hemispherical bowl* (436) has on the upper part of the body six encircling lines; the *deep bowl* (433) has twelve encircling lines all over the body.

B. *From the settlement.*

In the *settlement*, outside the graves, many sherds and single whole specimens of pottery with the same kind of decoration were found.

1) There are about 30 fragments with *knobs* forming two simple geometrical patterns. The size of the knobs and the intervals between them seem to vary in proportion to the size of the vessel. We find encircling rows of knobs or combined encircling and vertical rows of knobs. (Pl. XLIII, Fig. 313 a—c). The decorated vessels were probably all *bowls*, some of them with an angular outline. One sherd (no. 18) illustrates the technique employed — traces of the pin-holes are distinctly discernible on the inside. (Pl. XLIII Fig. 314 a, b). In other cases the pin-holes have been carefully smoothed over. The marked sherds belong to A III, C III, E III, E II, F III and G III.

2) More than a hundred sherds and one whole vessel of *ribbed ware* were found in the settlement. The whole vessel is in this case a *squat jar*. The base seems to have been flattened. The sides are convexly curved and symmetrically squat. The rim is splayed and wide (Fig. 302). In Teheran: no. 1734 E II 22.

The majority of the sherds are fragments of *bowls*, hemispherical or slightly tapering upwards. (Pl. XLIV, Fig. 315). The thickness of the

walls varies between 0.6 and 1.4 cm. Three sherds represent *the jar*, one with wide, out-turned rim, two with splayed rims. (Pl. XLIV, Fig. 316).

Some sherds belonging to *fruit-stands* are also to be found among the ribbed ware. One of the best preserved sherds has a wide, splayed foot and a high, cylindrical stem, hollow from below. Diam. 6.2 cm. ((Pl. XLIV, Fig. 317). On the horizontal upper part of the sherds are traces of the cup. (Pl. XLIV, Fig. 318: diam. about 5.5 cm. (Pl. XLIV, Fig. 319: diam. about 4.5 cm).

Two sherds with rims (Pl. XLIV, Figs. 320; Pl. XLV, 321) are probably parts of cups belonging to *fruit-stands*. They have curved, shallow bodies, the one with short flat rim, the other with plain rim.

The decoration consists of encircling ribs. In some instances they cover the whole body (Pl. XLV, Fig. 322); in others there are groups of ribs, usually located below the rim on bowls and jars. On the fruit-stands the ribs are to be found on the under side of the cup and on the stem in groups or all over the foot.

The sherds were found in strata III and II, mostly in A and E but also in C, F and G.

- 3) Some sherds (17) of *knobbed-and-ribbed ware* were found in the settlement, but no whole vessels.

The lower part of a large vessel (Pl. XLV, Fig. 323), probably a *bowl*, is preserved. It has a flat base and a depressed conical belly. The belly-line is angular. The remains of »the shoulder» is slightly convex, almost vertical. Diam.: bottom 14.5 cm., at the bellyline about 40.0 cm. Thickness of wall: at shoulder 0.5 cm., belly 0.9 cm.

Two sherds have a faintly angular outline while a third has a curved outline.

The sherds which include a part of the rim show that *the bowl* must be the type of vessel most commonly occurring. The bowls seem to have been rather large, with a slightly convexly curved, splayed or almost vertical body, and with plain (Pl. XLV, Fig. 324) or very short, flat (Pl. XLV, Fig. 325) rims.

Two sherds (Pl. XLV, Fig. 326) have an angular outline and indicate conical, shallow bodies with almost vertical upper part and short, flat rims. Thickness of wall: 0.6—0.7 cm.

The *decoration* consists as we have said of knobs and ribbed lines. The following two main types of pattern are to be distinguished:

- a) Encircling ribbed lines alternating with rows of knobs.
 - b) Encircling ribbed lines bordering knobs in various patterns.
- 4) Some sherds (about 15) of *grooved ware* were found in the settlement; but no whole vessels or outlines of vessels. There are two types of grooved

ware, one with narrow grooves, the other with broad ones. The narrow grooves seem to have been cut into the clay with a sharp-toothed tool (Pl. XLV, Fig. 327) and sometimes there is no great difference between them and the incised ones. The broad grooves seem to have been made with a bluntheaded instrument and then slightly smoothed over and sometimes rounded (Pl. XLVI, Fig. 328—30).

There are four narrow-grooved sherds, one of them almost certainly belonging to a *bowl*.

The broad-grooved sherds are of different shapes. The hollow, cylindrical stems belong to »fruit-stands», and one sherd is probably part of the cup of a »fruit-stand» (Pl. XLVI, Fig. 331 a, b). One sherd (Pl. XLVI, Fig. 332) probably belongs to a *jar*, the others to *bowls*, some of which are angular in outline (Pl. XLVI, Fig. 329). Most of the sherds are unmarked; two were found in A II and C II.

- 5) There are no fewer than 11 sherds with *incised patterns* which were found in the settlement. These specimens may be divided into two groups those with simple encircling lines and those with oblique, wavy or zig-zag lines.

The sherds seem to have been manufactured in the same way, all being finely smoothed and polished. The incisions, however, have been made with tools of different thickness — sometimes they are very broad and shallow.

Among the sherds we find one which is cylindrical and hollow (Pl. XLVI, Fig. 333), probably part of a stem belonging to a *fruit-stand*. There is also part of the cup of a fruit-stand (Pl. XLVII, Fig. 334) about 0.9 cm. thick.

Other sherds with simple encircling lines belong to *bowls* (Pl. XLVII, Fig. 335).

Among the specimens with oblique, wavy or zig-zag lines there are sherds from *bowls* and *jars* (Pl. XLVII, Fig. 336, 337, 338).

- 6) Finally, we have some sherds with *mixed decoration* — grooved lines and knobs or ribs and incised bands or broad-grooved lines with incised, encircling, wavy lines in the grooves (Pl. XLVII and XLVIII, Figs. 339—343). These were found in A II and B III 4.

AN EXCEPTIONAL CASE IN STRATUM III

In grave C III s¹ were found three clay vessels at a level of +0.30 m. (Fig. 196), the deepest grave in this shaft. But the vessels are by no means characteristic of stratum III. Two of the vessels are most closely related to curved bottles in layer

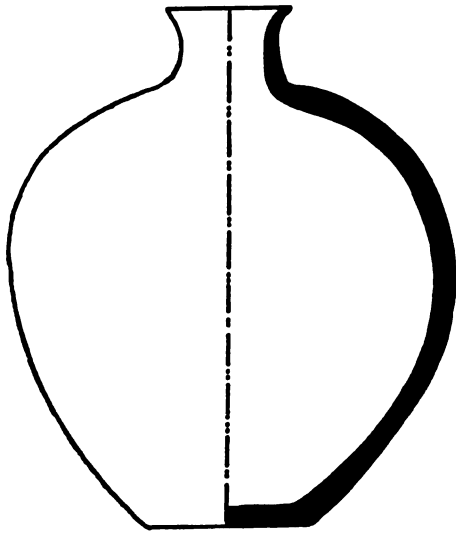


Fig. 344 a

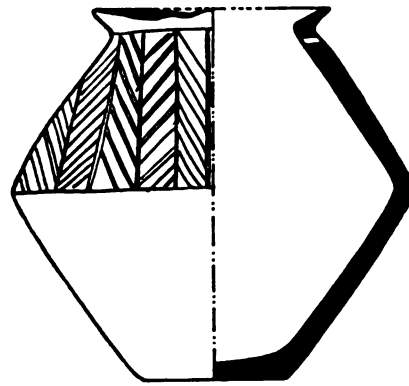


Fig. 344 b

II b (Fig. 344 a). There is complete conformity as to the necks, but the bodies are more rounded, almost globular. The belly is not concave as in the majority of curved bottles, but rather high, especially in the larger vessel. They are 21.0 and 15.5 cm. in height respectively.

A still younger type is the third vessel, a biconical jar with a sharply demarcated belly-line and straight back and shoulder-lines (Fig. 344 b). The belly and shoulder parts are of the same height. Below the out-turned rim are two holes for suspension. Height: 10.8 cm. The shoulder part is ornamented with *vertical* bands with burnished hatchings alternating in two directions. The vertical ornamentation has been carried out according to the same principle as that we have observed for the painted ceramic in stratum III, but the technique that has been applied as also the form of the vessel oblige us to classify it in a group belonging to stratum II a, which will be treated later. Related in both directions, of course, is the group of biconical carinated jars with concave belly and shoulder belonging to stratum II b.

It would not, certainly, have been impossible in Shah Tepé to bury a corpse with burial gifts etc. at least 4 m. deep; but it seems unlikely that such was the case. Perhaps these forms of vessel were developed earlier elsewhere and should be regarded as imported wares. Curved bottles, thus relations to two vessels in C III s¹, were found in shaft C in C II s¹⁹ at +1.30 m., and a biconical vase that is also to some extent related was found in C II s¹⁰ at +2.10 m. This is 1 m. and 1.80 m. higher, respectively, than C III s¹, which would indicate that the time-difference need not necessarily be so *very* great and that an earlier development had taken place elsewhere.

1. *Fruit-stands.*

To the transitional layer between strata III and II b belong certain of the so-called fruit-stands, which as a rule consist of a flat or convex bowl supported on a column or »stem», which in its turn rests upon a downwardly widening foot. Only a couple of these occur in the graves. In grave D III s² was found such a fruit-stand with a straight, cylindrical stem, conical, hollow foot, and in the deep main bowl itself an inner narrower bowl. (Fig. 214 and 345 a).¹ In the rich grave E III s⁶ was found, besides a couple of footed cups and five other vessels, a »fruit-stand» (no. 1704) with a rather flat bowl, a stem thickened at the middle and a downwardly widening foot with burnished zig-zag ornamentation (Fig. 223 and 345 b).

Other more or less fragmentary »fruit-stands» were found in the settlement. F III 11 no. 1399 (+2.45 m.) lacks the larger part of the bowl (Pl. XLVIII, (Fig. 345 c); the stem has rather concave sides but is reminiscent in its simplicity of form of the recently mentioned specimen from D III s². F III 17, no. 1773, +0.80 m. (Fig. 346 a; Pl. XLVIII, b) and E III 3, no. 1166, +1.85 m. (Pl. XVIII, Fig. 347) are examples of fruit-bowls that as regards stem and foot conform with the fruit-stand in grave E III s⁶, though the former two specimens are hollowed out in the middle of the bowl; they may perhaps have been lamps — a possibility that finds confirmation in the little projecting tongue that is to be seen on a similar clay vessel from Tureng Tepé as also on E III 3, no. 1166.

Two bowls with broken off stem and foot (E III 4, no. 1216, +1.10 m., (Pl. XLIX, Fig. 348) and E III 5, no. 1300, +1.00 m. (Pl. XLIX, Fig. 349) also belong here. Both are well polished. The lower part of the body is conical and splayed. The upper part is vertical, more or less concave and with a plain rim. They are black in colour. Diameter: 29.7 and 26.0 cm. respectively.

The »stems» belonging to these bowls were possibly profiled, provided with ribs, grooves or incisions. Several such are here mentioned under the chapter-heading »Decoration». Fragmentary »stems» of the type belonging to the fruit-stands in E III s⁶, F III 17 and E III 3 are fairly common. One such comes from the layer G II. They are treated in the chapter »Some pottery types from the Settlement, 12.»

Finally, in G III 4, no. 1554, +1.50 m. (Pl. XLIX, Fig. 350) we have a fruit-stand foot with column and widening, conical lower part. Unlike the majority of other fruit-stands, this one has a flat, closed bottom but is hollow inside. We find the same also in the chalice-fruit stand in grave E III s⁶ (no. 1705), in F III 11 (Fig. 345) and in a fragmentary foot in G III 7, no. 1377,

¹ A similar »double-cup» without stem and foot has been found in horizon K at Hama in Syria during the Danish excavations, dated to the first part of the third millennium B. C. (H. Ingholt, *Rapport préliminaire sur sept campagnes de fouilles à Hama en Syrie*, p. 28, Pl. IV, 5, København 1940).

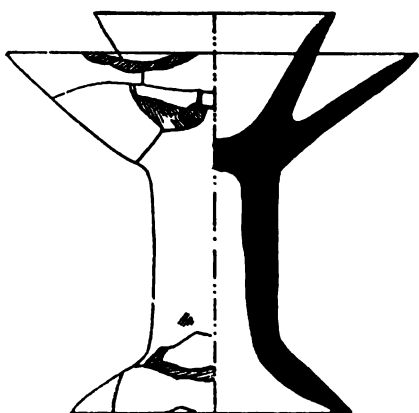


Fig. 345 a

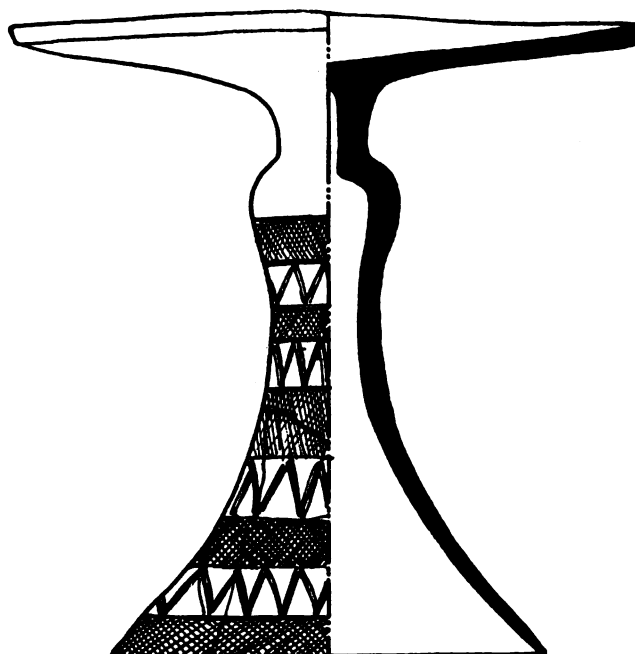


Fig. 345 b

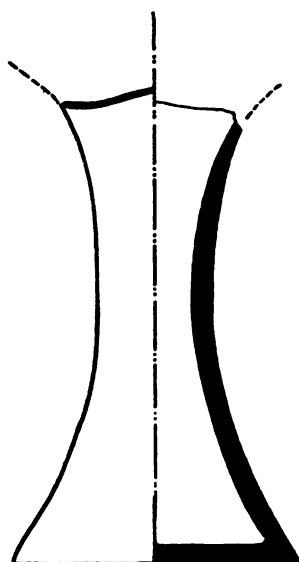


Fig. 345 c

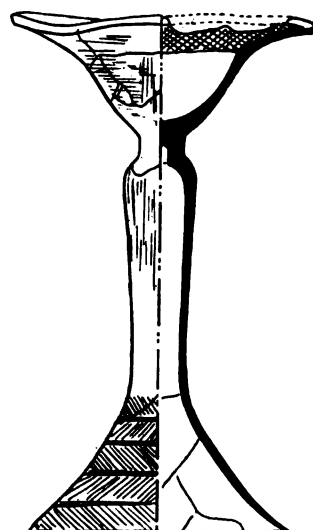


Fig. 346 a

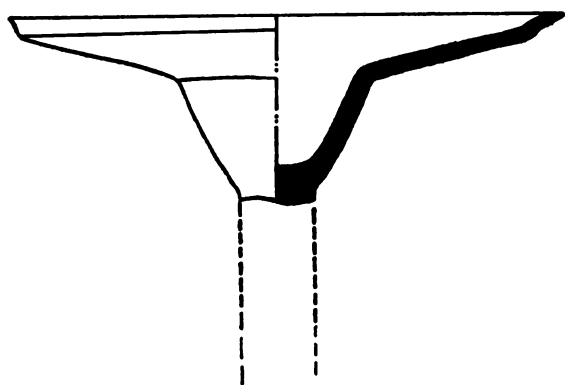


Fig. 347

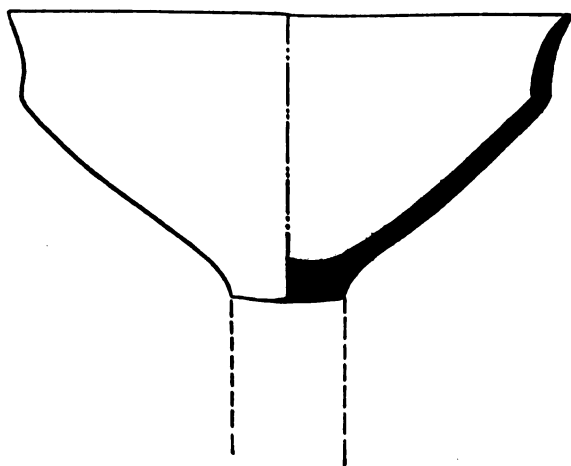


Fig. 348

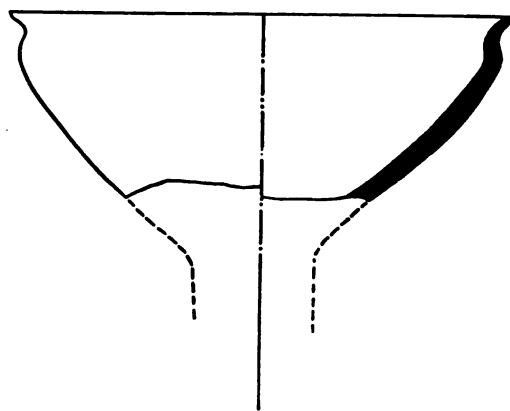


Fig. 349

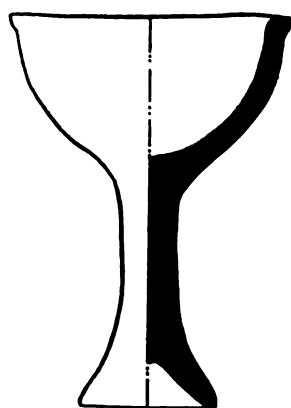


Fig. 350 b

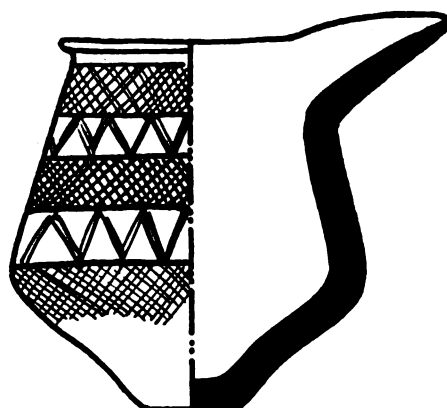


Fig. 351

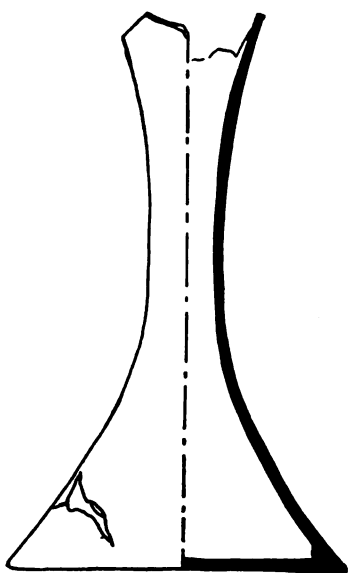


Fig. 350

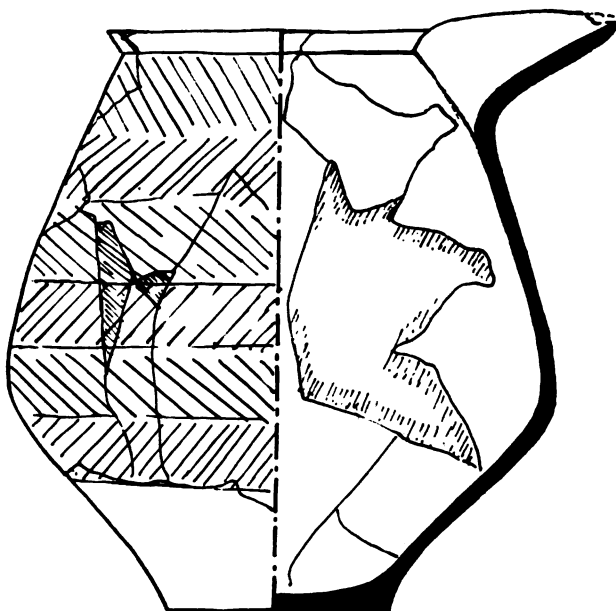


Fig. 352

though it is more commonly met with in stratum II, viz. in A II (2 fragments). The connection with stratum II is marked in fruit-stands of types like F III 17 by burnished decoration in horizontal zones on the foot.

2. *Chalices.*

Together with one »fruit-stand» and other vessels, two »chalices» were found in E III s⁶ at +2.25 m. (Fig. 223 and 350 b). One of these (1705) has a conical cup together with a splayed foot terminating in a cylindrical stem. The whole vessel is hollow from above down to the flat base. The other piece (1702) is a miniature chalice with hemispherical cup, high narrow stem and splayed foot, hollow from below. In stratum II a¹ two late graves contained similar but non-identical vessels E II s³ (623 and 618) and E II s² (666)⁰.

3. *Biconical jars with trough-shaped deep, open spout.*

We have three such pots, either whole or restored, together with a number of fragments, especially characteristic spouts. The jars are decorated with 5—6 zones of burnished ornamentation, zig-zag, slanting strokes or cross-hatching. Of these three jars one is a miniature pot (Fig. 351) found in the above-mentioned grave E III s⁶ (1701) while another was a part of the depot-find F III 17 no. 1774 (+0.90 m) (Pl. XLIX, Fig. 352).

The loose spouts — about 60—70 in number — derive from both strata III and II.

STRATUM II b

In the graves of this stratum one often finds certain combinations of unpainted, black-polished or grey clay vessels, commonly 3—5 together. Thus we find *deep bowls or goblets, cylindrical vessels with or without lugs, biconical vessels with or without lugs, round or flattened egg-shaped jars with lugs and relatively high curved egg-shaped vessels without lugs*. Where there is any ornamentation this consists of horizontal zones formed of narrow, burnished, shining and graphite-like lines, between which are zig-zag or slanting lines.

1. *Deep bowls or goblets.*

These have a flat base, a convexly curved, slightly splayed body and plain rim. From a typological point of view the oldest specimens form a transition from the hemispherical bowl to the later high bowls or goblets. Some of them were found in graves of stratum III. (Fig. 353, no. 1698, Fig. 354, no. 309).

In Stockholm: G III s⁵ no. 1698 (+0.45) and G II s¹⁹ no. 1742 a (+2.60);
A III s² no. 309 (+0.60).

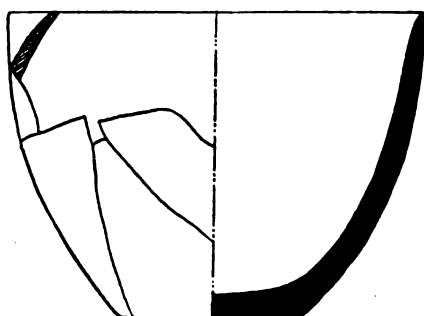


Fig. 353

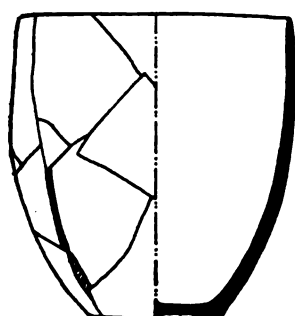


Fig. 354

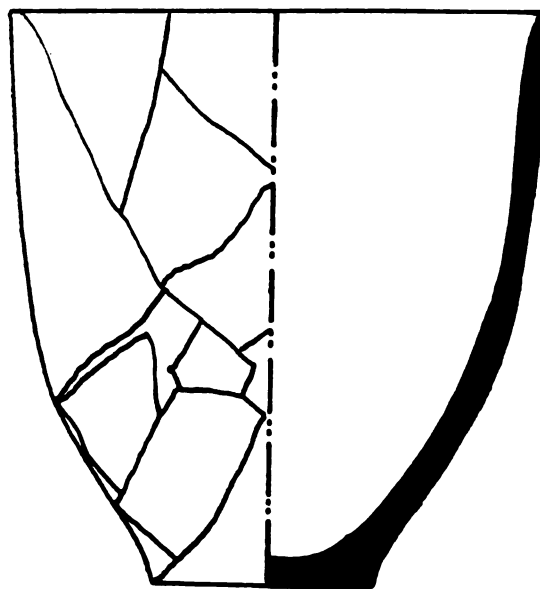


Fig. 355

In Teheran: D III s¹ no. 405 (+2.35).

The following were discovered in graves of *stratum II b*: A II s¹⁴ (+0.95) (fragmentary), B II s¹⁶ no. 764 (+2.70), C II s¹¹ (+1.60), C II s¹⁰ no. 540 (+2.10), E II s¹⁷ no. 1518 (+4.40), E II s⁸ no. 877 (+4.65 (Fig. 355), G II s¹⁶ no. 1302 (+3.35), G II s¹¹ no. 1190 (2 specimens, one unusually wide (Fig. 356), the other only in fragments (+3.95). All of these are in Stockholm except nos. 877 and 1302;

and some others in *stratum II a*²:

In Stockholm: A II s⁴ no. 63 (+4.10) (Fig. 357), B II s⁸ no. 558 (+4.50).

In Teheran: B II s⁷ nos. 563, 566 (2 specimens +4.60).

The goblets from *stratum II b* are generally widest at the mouth and are sometimes higher than they are wide. This is the case with only one (Fig. 354, A III s² no. 309) of the four goblets from *stratum III*. The specimen from G II s¹¹ (no. 1190) has convexly curved sides, somewhat tapering upwards, and it is widest below the middle. Of the same kind is a little goblet found in the settlement (Fig. 358, F II 15 no. 1357, +3.80 m.). The fine goblets from *stratum II b* (including A III s² no. 309) are made of very thin, «egg-shell-like» earthenware, often black-polished. In *stratum II a*² the goblets are wider than they are high and have thick walls.

There are also a number of goblets from the settlement, for the most part resto-

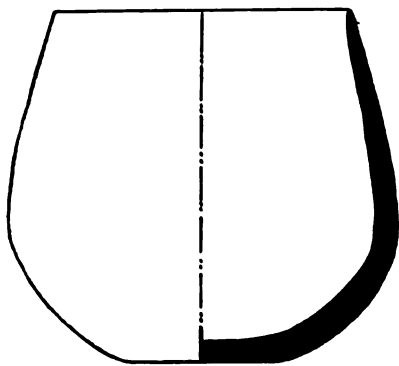


Fig. 356

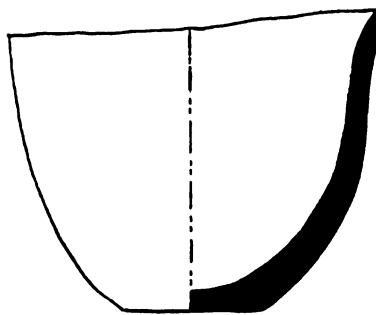


Fig. 357

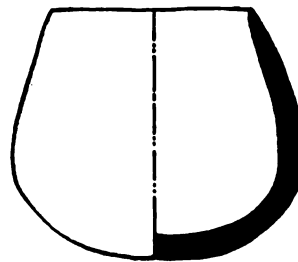


Fig. 358

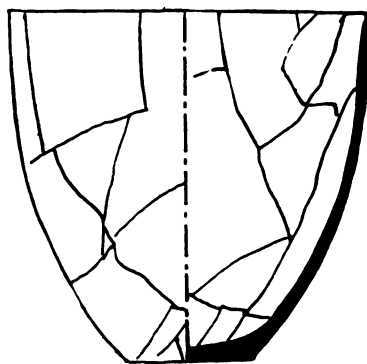


Fig. 359

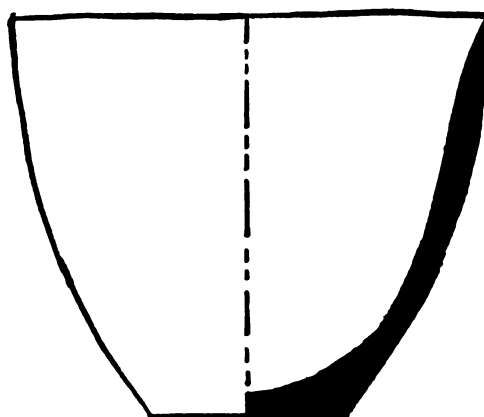


Fig. 360

red after their arrival in Sweden. There is also much sherd-material from such goblets. The following may be mentioned here:

E III 3 no. 1165 (+1.85), G II 7 no. 1520, (Pl. XLIX, Fig. 359), 1521 (2 specimens made of earthenware 1.5—3 mm. in thickness), G II no. 962 as well as a further half dozen similar ones. The goblet (Pl. XLIX, Fig. 360), C II 43, no. 296 (+5.45) was found in the layer II a², and thus belongs to the younger types. It is of coarse earthenware, brown in colour and broader than it is high (12.55 × 10.7 cm.). A couple of these »goblets» are of rather large dimensions, approximately 30 cm. in height and 33 cm. in breadth above the centre. They may be regarded as storage jars. They were possibly found in stratum III. A similar vessel is provided with a pointed tongue protruding straight out from the rim (Pl. L, Fig. 361). The large black-polished storage jar B III 6 no. 997 (+1.20) has the same form (Pl. L, Fig. 362). Unlike the other forms of goblet, this one has a broad, out-turned rim, almost flat. The dimensions are 62 × 62 cm. The form is the same as that with which we are familiar in connection with the large black and red-painted storage jars in stratum III. A later developed form of this

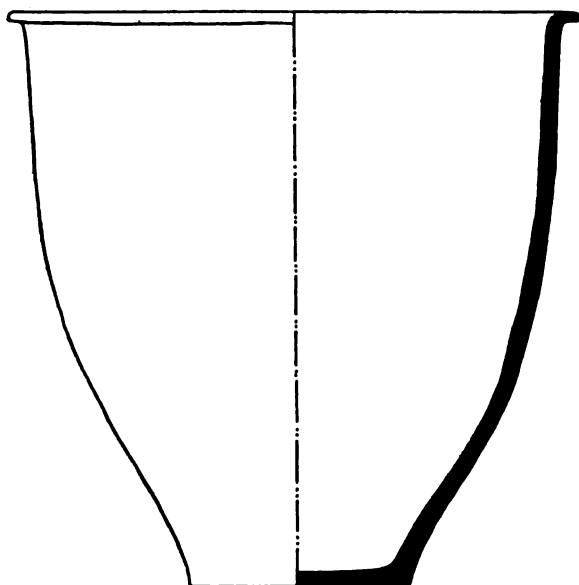


Fig. 362

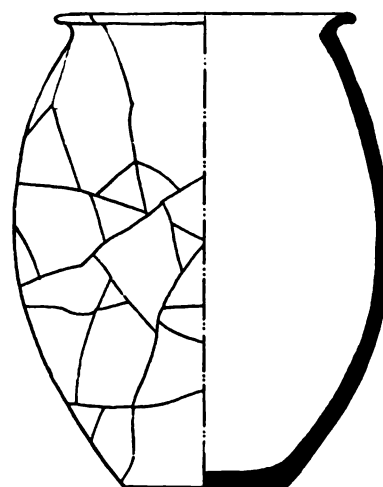


Fig. 363

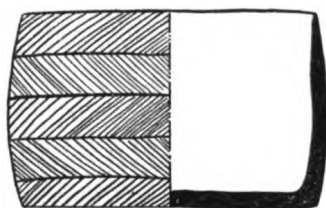


Fig. 364

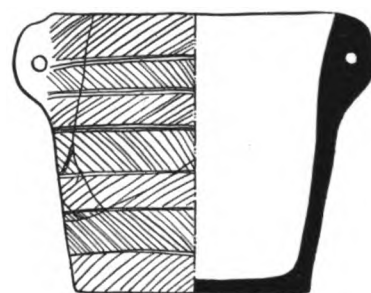


Fig. 365

type of storage jar is found in a blackpolished vase of more oval shape, thus broadest at the middle and narrower at the base and mouth. (Pl. L, Fig. 363, B II 24 no. 709, +2.90 m.). Also this vessel has an out-turned rim. It measures 51.5 cm. in height and 34 to 35 cm. in diameter.

2. »Cylindrical» bowls with or without lugs.

The cylindrical bowl has a flat base, in most cases forming almost a right angle with the body. The body is cylindrical, almost cylindrical or pseudo-cylindrical with concave walls. The rim is plain; and in some cases there are two vertical string-hole projections or lugs below the rim. Two bowls have a short open spout like a beak.

a) *Cylindrical bowls without lugs.* (Fig. 364).

In Stockholm: C II s⁸ no. 505; C II s³ no. 427; C II s¹⁶ no. 818; E III s⁶ no. 1699; E II s⁹ no. 987; E II s¹⁹ no. 1696; G II s¹³ no. 1246.

In Teheran: B II s¹⁷ no. 766; E II s¹⁰ no. 1031; G III s¹ no. 1433; G II s¹⁷ nos. 1322, 1329 (2 specimens).

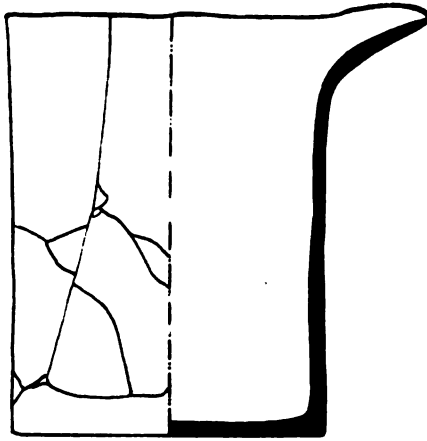


Fig. 366

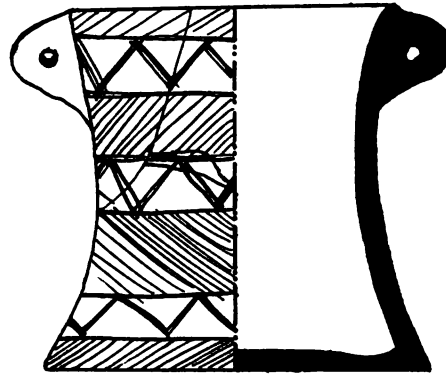


Fig. 367

b) *Cylindrical bowls with lugs* (Fig. 365).

In Stockholm: B II s¹⁶ no. 763; E II s¹⁹ no. 1695.

In Teheran: C II s¹⁹ no. 950; E II s⁶ no. 954; F III s¹³ no. 1626; E II s¹⁹ no. 1695.

c) *Cylindrical bowls with beaks*. (Fig. 366).

In Teheran: C II s⁶ no. 503, C II s¹² no. 536.

All the bowls of the a) group are decorated with burnished ornamentation in horizontal zones, except B II s¹⁷ no. 766 and G II s¹³ no. 1246. Of the b) and c) vessels only F III s¹³ no. 1626 and E II s¹⁹ no. 1695 are decorated.

d) *Pseudo-cylindrical bowls with concave walls and lugs*. (Fig. 367).

In Stockholm: C II s¹⁷ no. 822; E II s¹¹ no. 1032.

In Teheran: C II s⁷ no. 541; E II s¹² no. 1075.

Of these four bowls only E II s¹¹ no. 1032 is not ornamented.

No cylindrical vessels were found in shafts A, D, H.

Cylinder-shaped vessels with and without lugs appear at about the same period. Lugs are to be seen also on the contemporaneous small egg-shaped vessels, but do not occur earlier (in stratum III). A pseudo-cylindrical vessel (in C II s¹⁷; Fig. 205) belongs also to an early grave (+1.60). It is not possible to make any chrono-

logical distinction between the different variants. The occurrence of the ornamented cylindrical vessel in C II s³ (Fig. 212), however, is interesting, it was found at +4.60 m., just at the boundary between II b and II a². A cylindrical vessel in E II s⁹ (Fig. 368) was also found at a corresponding height. The former of these two vessels is seen to be closely related to a cylinder-shaped »bowl» with slightly concave walls but

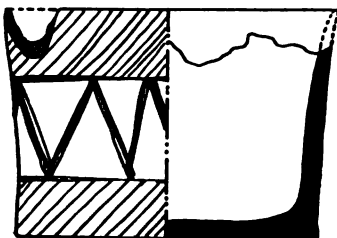


Fig. 368

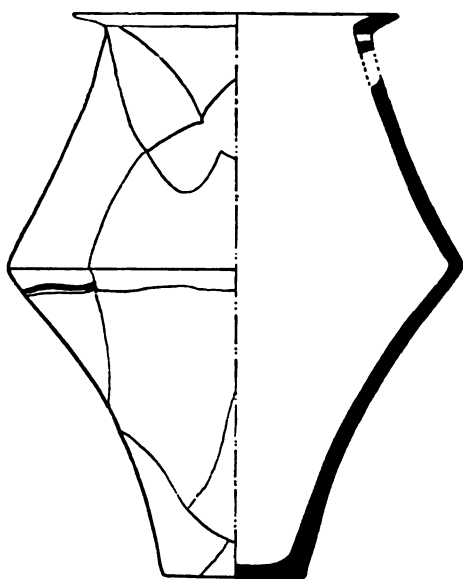


Fig. 369

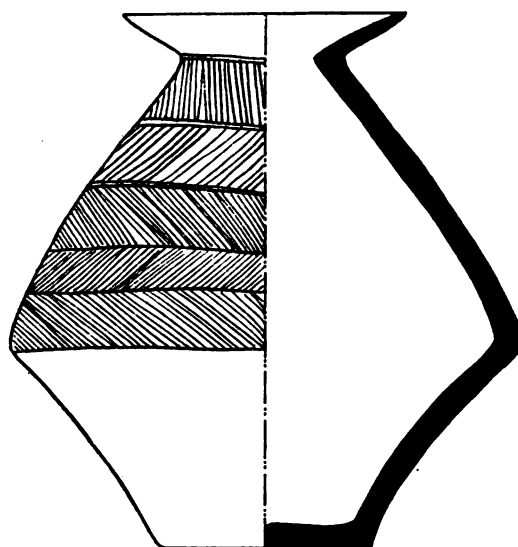


Fig. 370

very similar ornamentation that was found in Tepé Hissar III c.¹ This vase is unique in Tepé Hissar, and I do not consider it improbable that it was imported from the north, that is to say, from the steppes. It must possess a certain importance for the chronology.

Fragmentary, cylinder-shaped vessels were also found outside the graves. They are without lugs and, like the corresponding vessels in the graves, they are comparatively low and wide, while the cylindrical and pseudo-cylindrical vases provided with lugs are comparatively high and narrow.

3. *Biconical jars with or without lugs.*

A trait common to all these jars is the biconical form with a more or less accentuated angular line (the belly-line) between belly and shoulder. The base is flat, the belly mostly depressed and the shoulders high. The rim is wide and out-turned. There are, however, certain differences:

a) *Biconical carinated jars with concave belly and shoulder.* (Pl. I, Fig. 369).

The belly and the shoulder are of about the same height, though the belly is more concave and tapering than the shoulder. The belly-line is sharply accentuated. The rim or the body below the rim is pierced by two holes for suspension. The height varies between 15.1 and 18.75 cm.

In Stockholm: C II s¹⁰ no. 539 (+2.10 m.); E II s¹⁶ no. 1514 (+4.0 m.).

In Teheran: A II s¹² no. 718 (+1.10 m.); B II s¹⁷ no. 768 (+2.80 m.).

¹ E. SCHMIDT: Excavations at Tepé Hissar, Pl. XLII, H. 3493.

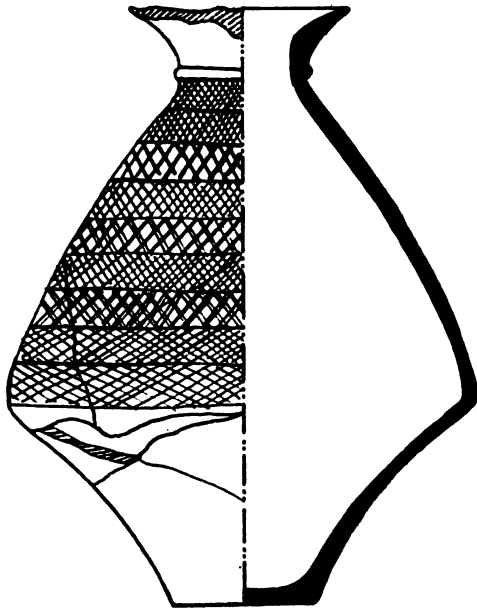


Fig. 371

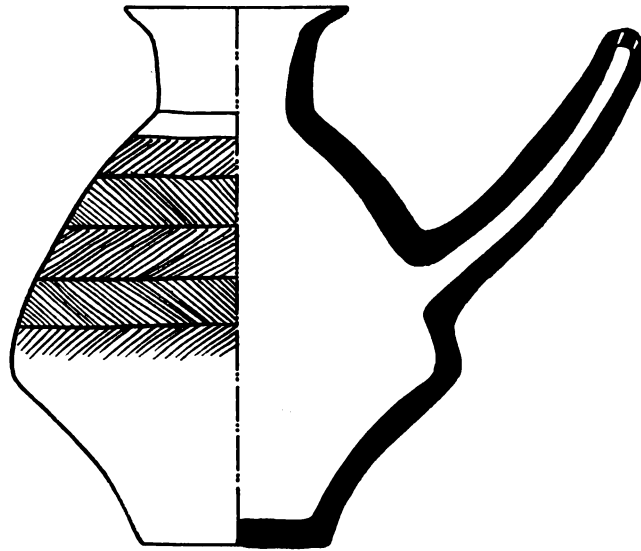


Fig. 372

All four jars are decorated with burnished bands on the shoulder. A fifth specimen comes from the settlement (E II 13).

b) *Biconical carinated jars with concave belly and convexo-conical shoulder* (Fig. 370).

These jars have a flat base and an accentuated belly-line, sometimes angular, more often rounded. The belly is concave and depressed, the shoulder high and slightly convex, rarely quite conical or concave-convex. The rim is wide and out-turned. Only one jar has a short, concave neck with wide, out-turned rim (B II s¹² no. 755; Fig. 189). Except the jars G II s¹⁷ no. 1331 (Fig. 260) and F II s⁴ no. 1130 (Fig. 249), which have two holes close below the rim, there are no arrangements for suspension in this type of jar. Only three of these jars are not decorated (E II s⁶ no. 953; E II s⁹ no. 986; F II s⁴ no. 1126). A biconical jar with special neck-form (A II s¹² no. 716; Figs. 175 and 371 should perhaps also be mentioned here. The neck is pronounced, not very high, and is provided with an encircling rib or line in relief. The rim is very wide and splayed, somewhat tapering but without a flat surface).

The height varies between 8.95 cm. and 25 cm.; but the average height is about 15 cm.

In Stockholm: A II s¹² no. 716; B II s¹² no. 755; C II s¹⁶ no. 820; E II s¹¹ no. 1034; E II s¹⁶ no. 1513; E II s¹⁹ no. 1693; E II s⁶ no. 953; E II s⁹ no. 986.

In Teheran: A II s¹³ no. 720; F II s⁴ no. 1126; F II s⁴ no. 1130; G II s¹⁷ no. 1331.

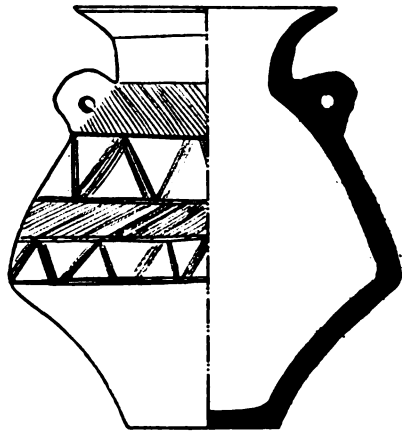


Fig. 373

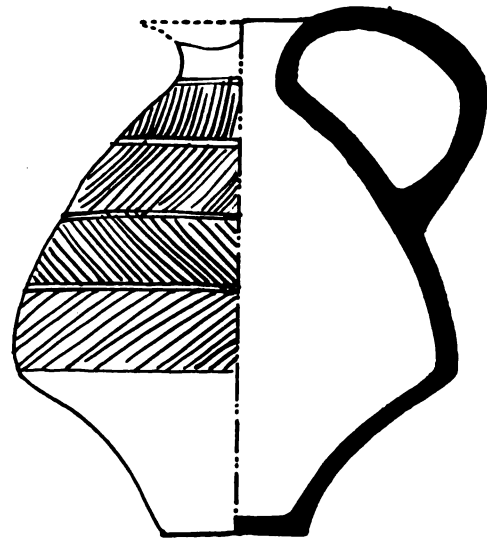


Fig. 374

A small biconical jar with lid was found in B II s⁹ (642) at a height of +3.90 m.; but it will be more practical to treat this vessel together with others from II a.

c) *Biconical carinated jugs with concave belly, convexo-conical shoulder, cylindrical neck and long spout* (Fig. 372).

The jugs differ from the vessels in the foregoing series in their neck and spout. The neck is rather high and cylindrical, with a wide, splayed rim. The spout is tubular, long and narrow, terminating in three strainer holes. Two of these jugs were found in graves: E III s⁸ no. 1706 (+2.35); E II s¹⁹ no. 1694 (+3.00) and one in the settlement: F III I no. 1328 (+2.70) (Pl. LXXXIX e), fragmentary. As we see, two belong to the transition layer between III and II b.

d) *Biconical, carinated jars with concave belly, conical shoulder and lugs (string-hole projections)* (Fig. 373).

These jars have a very accentuated belly-line, angular or somewhat rounded. The belly is concave and very depressed. The shoulder is high, convexly curved or conical. In most cases there is a short, almost cylindrical neck with an out-turned or splayed rim. The two string-hole projections are placed on the shoulder close below the neck. These jars are certainly closely related to the round or oval egg-shaped jars with lugs (stratum II b, 4.)

The height varies between 9.9 and 12.55 cm.

In Stockholm: C II s¹² no. 537; C II s¹⁶ no. 819; E II s¹¹ no. 1033.

In Teheran: A II s¹² no. 719; C II s⁶ no. 502; C II s⁷ no. 543.

e) *Biconical, carinated vessels (jugs) with concave or straight belly, convexo-conical shoulder and handle* (Pl. LI, Fig. 374).

There are only two jars of this kind, one of which was found in the settlement

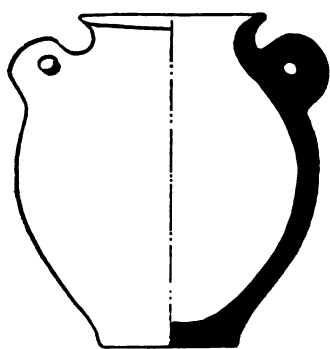


Fig. 375

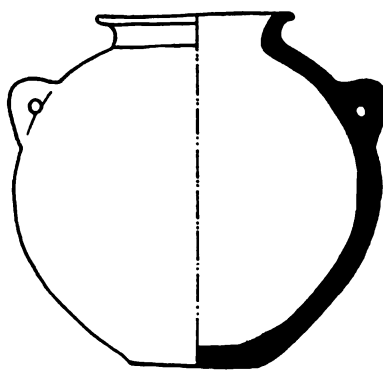


Fig. 376

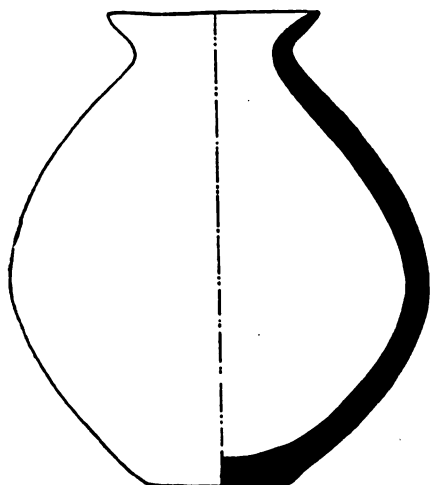


Fig. 377

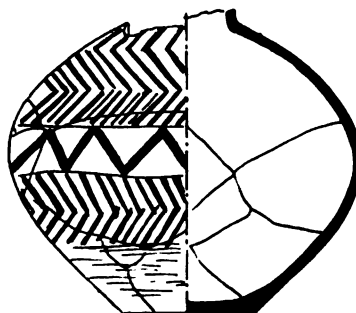


Fig. 378

(B II 28 no. 745) and the other in a grave (E III s⁶ no. 1707). The neck is low and cylindrical, with out-turned rim. The shoulder of B II 28 is decorated with a burnished ornamentation in the form of encircling bands. The handle runs from the rim to the lower part (B II 28 no. 745) or the middle of the shoulder (E III s⁶ no. 1707). The latter specimen is more squat and depressed, and belongs to a grave from the transition layer between III and II b.

In Stockholm: E III s⁶ no. 1707 (+2.35); B II 28 no. 745 (+3.30).

4. *The small oval or globular jars with string-hole projections (lugs).* (Figs. 375 and 376).

These vessels have a flat base and curved body. Sometimes the body is oval or almost globular; sometimes the lowest part of the body is slightly concave while the remaining part is convex with depressed shoulder. They are thus closely related to the biconical jars with lugs (Stratum II, 3 d). The two string-hole projec-

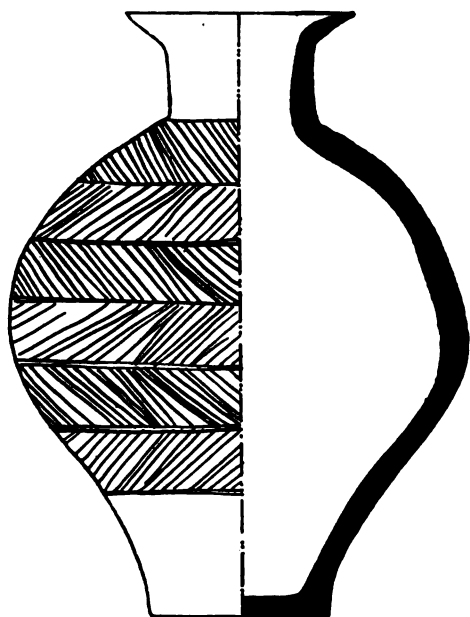


Fig. 380

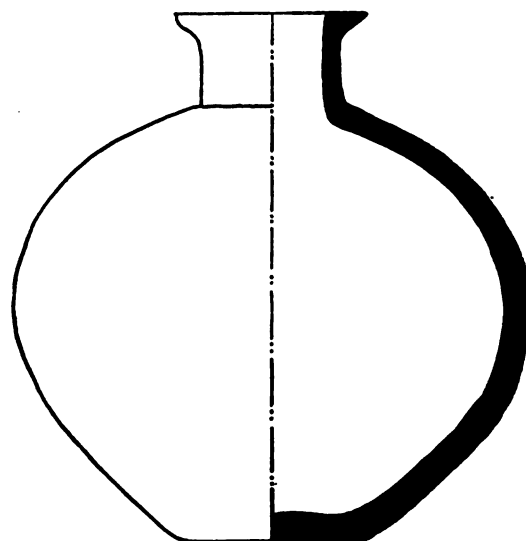


Fig. 381

tions are placed on the upper part of the shoulder. All the jars are provided with necks, mostly short, cylindrical and relatively wide with out-turned rim.

The height varies between 7.9 and 12.1 cm.

In Stockholm: B II s¹⁶ no. 761; C II s¹³ nos. 635, 636; E II s¹⁷ no. 1517; F III s¹³ no. 1627; G II s¹³ no. 1245.

In Teheran: A II s¹² no. 717; B II s¹⁸ no. 769; C II s¹⁷ no. 821; E II s⁸ no. 878; E II s¹⁰ no. 1030. — = 11 specimens.

5. *The small oval or globular jars without string-hole projections.* (Pl. LI, Fig. 377).

These jars have a flat base, a convexly curved, globular or oval body and a short concave neck with splayed rim.

In Stockholm: E II s⁹ no. 985 (Fig. 233).

In Teheran: A II s¹² no. 715 (Fig. 175); B II s¹⁸ no. 770 (Fig. 183). = 3 specimens.

Probably the little globular bottle D I 18 no. 322 (+ 3.50 m; Fig. 378) belongs to this group, though it may possibly be a later development. A similar oval black little jar (Height: 15.8 cm) with a short cylindrical neck was found in A II 45 no. 929; + 2.20 m. (Pl. LI, Fig. 379).

6. *The curved egg-shaped bottles.* (Figs. 380 and 381).

These are the most frequent type of vessel in stratum II b. Some specimens already occur in the transition layer between III and II b. They have a flat base,

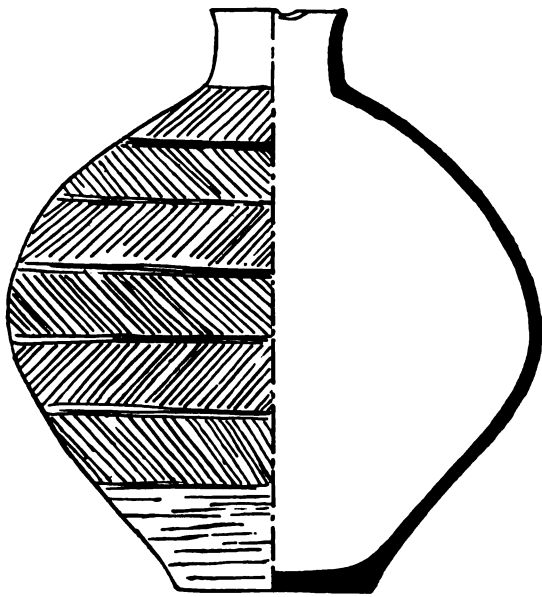


Fig. 382

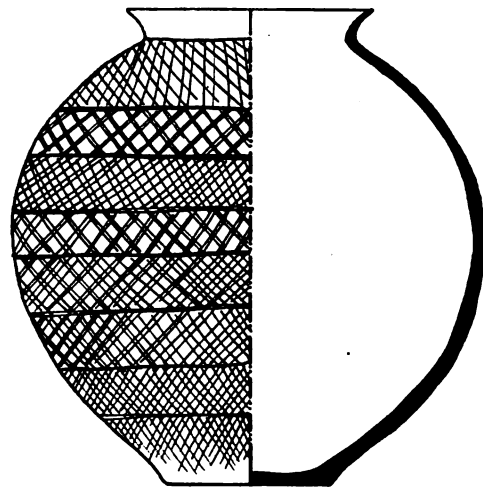


Fig. 383

usually a concave belly and convex shoulder. In some cases, especially in the youngest graves, the body is more globular. The belly-line is rounded. The neck is accentuated, cylindrical or slightly tapering, sometimes more concave, with an out-turned or splayed rim. The bottle E II s¹⁷ no. 1516 (Figs. 382 and 231) is the only one with a plain rim on the neck. In other respects, also, this bottle differs from most of the others: the body is much wider, almost globular, like the late bottles G II s¹² no. 1247. and B II s⁶ no. 557. The majority of the bottles are decorated with encircling burnished bands.

The height varies between 9.75 and 23.45 cm., but for 20 specimens between 12 and 16 cm.

In Stockholm: A II s⁸ no. 325; B II s⁵ b no. 573; B II s¹⁶ nos. 759, 760; C II s⁸ no. 504; C II s¹² no. 538; C II s¹³ no. 634; C II s¹⁶ no. 817; E III s⁶ no. 1708; E II s¹¹ no. 1035; E II s¹⁷ no. 1516; F III s¹³ no. 1628; G II s¹¹ no. 1189; G II s¹³ no. 1244. = 14 specimens.

In Teheran: A III s⁶ b nos. 544, 545; B II s⁶ no. 557; B II s⁹ no. 642; B II s¹⁷ nos. 765, 767; B II s¹⁸ no. 771; C II s⁶ no. 501; C II s⁷ no. 542; C II s¹⁷ nos. 823, 824; C II s¹⁹ nos. 949, 951; E II s¹⁰ no. 1029; E II s¹² no. 1074; G III s¹ no. 1434; G II s¹² no. 1247; G II s¹⁷ no. 1330. = specimens.

A typical egg-shaped, curved bottle was found in the settlement in D II 4 no. 352 (+2.90 m.).

7. *Big oval-globular jars* (Fig. 383).

A big oval-globular jar with flat base, wide mouth and out-turned rim (B II s⁶ no. 556) appears to be related to group 5, the small oval or globular jars. It is 25 cm. in height and is decorated with six encircling cross-hatched bands.

Another jar of similar kind (C II 90 no. 535) was found in the settlement. It is symmetrically oval and has a comparatively small mouth with a wide, outturned rim. It is 42 cm. in height and there are traces of encircling hatching on the body (Pl. LI, Fig. 384). Of the same size is another jar (G III 1, no. 1461) found in the settlement. During the burning or before, the shoulder has been squeezed (Fig. 385).

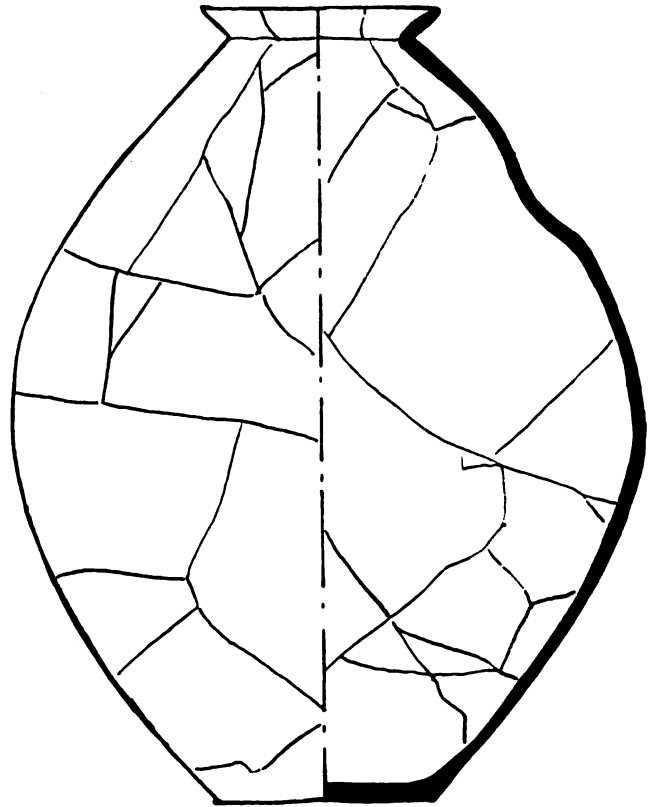


Fig. 385

The type has survived and is also to be found in stratum II a (F II 6, +5.30 m. and others).

8. *Oval-globular, jar-shaped spouted jugs* (Pl. LI, Fig. 386).

Two such jugs in a state of good preservation are known. One was found in a grave (F II s⁴ no. 1127, +4.55 m., Fig. 249), while the other was found in the settlement at +4.30 m (C II 64 no. 377). Both have a flat base and a convexly curved, almost globular body. The grave-jug (F II s⁴ no. 1127) has a rather high shoulder, the spout is relatively short, partly tubular and terminates horizontally open, cut-away and shaped like a beak. Height: 17.6 cm.

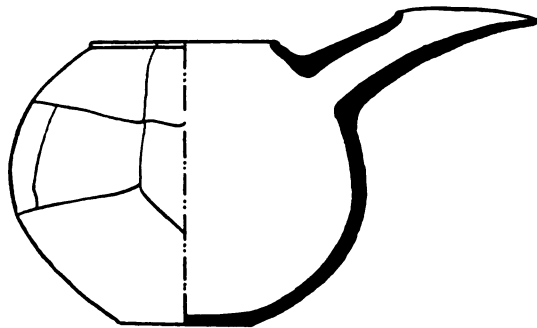


Fig. 386

C II 64 no. 377 (Fig. 386) has no neck but a very short and raised rim and a depressed shoulder. The spout is tubularly tapering and terminates horizontally open, shaped like a pointed beak. It is placed on the upper part of the shoulder, close below the rim. Height: 11.0 cm.

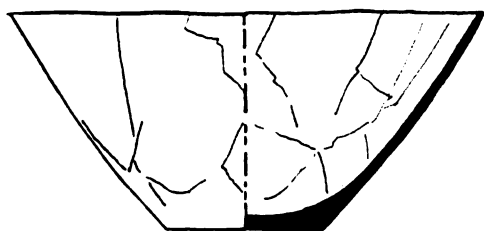


Fig. 387

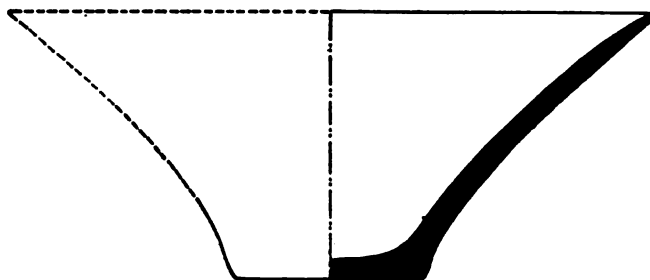


Fig. 388

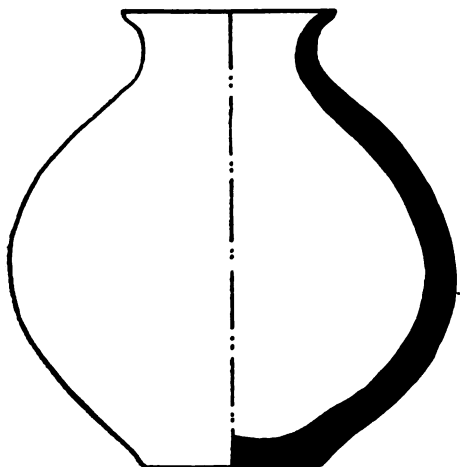


Fig. 389

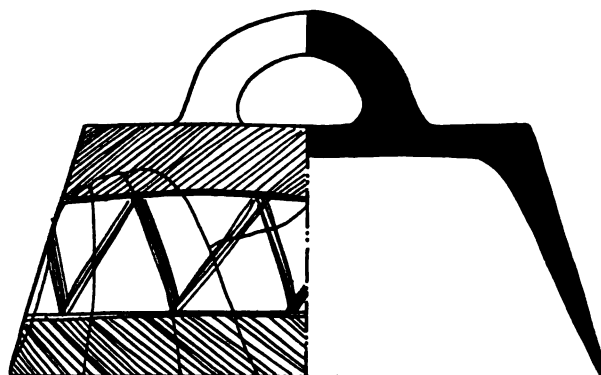


Fig. 390

9. Conical bowls (Figs. 387, 388).

Four »conical bowls» were found in the settlement. They have flat bases and conical sides with plain rim. In two cases the sides are straight, in two others concave. The former are no. 1645 F III 19 (+2.50) and no. 1373 F III 3 (+2.70; in Stockholm; Fig. 387); the latter are no. 711 C II 10 in (Fig. 388; Teheran) and another without number (in Stockholm). The bowls from F III were found in the transition layer, no. 711 C II 10 at +4.30 m. = II b.

A fifth conical bowl with concave sides belonged to the grave F II s⁵ (no. 1217 +4.0 m; Fig. 248) in the same layer as C II 10. It has a flat ellipsoid base and the mouth is concave (low) on the short sides and convex (high) on the long sides.

10. Small globular bottles (Fig. 389).

The two specimens of the above, found in grave F II s⁴, have a flat base, globular body and cylindrical neck. One of the bottles has a flat, out-turned rim, with two holes for suspension. The other, somewhat larger, bottle has a splayed rim and no arrangements for suspension. Cf. 568 B II s⁷; +4.60 m.

In Teheran: F II s⁴ nos. 1128, 1129 (+4.55 m.). The grave was certainly late II b.

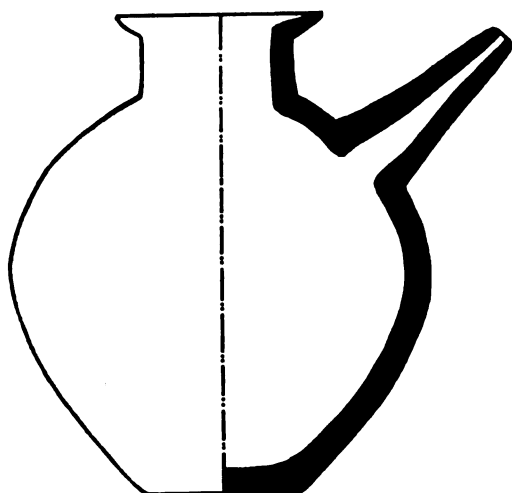


Fig. 391

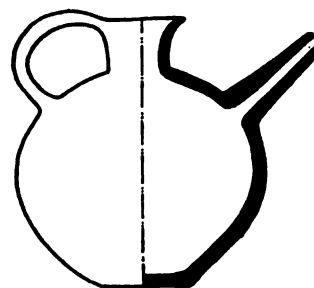


Fig. 392

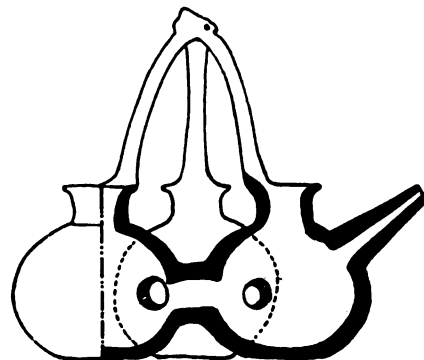


Fig. 393

II. Coniform lids (jar covers) with handle (Fig. 390).

These lids are represented in the graves by two specimens, both of which are decorated with burnished bands. They are shaped like the frustum of a cone with a handle placed on the middle of the upper side.

In Stockholm: E II s¹⁶ no. 1512 (+4.00 m.)

In Teheran: F II s⁴ no. 1126 b (+4.55 m.).

Some other such lids come from the settlement.

STRATUM II a²

Characteristic of this stratum are the *small almost globular spouted jugs*, as well as *globular bottles*, generally with round bottoms, *footed vessels* and *low biconical carinated jars*. Besides these, there are also some single specimens of other forms, partly remains from an earlier period, such as for instance the *deep bowls*. Only a few of these vessels are ornamented.

I. Globular spouted jugs (Figs. 391, 392, 393).

Altogether 19 of the above are known from the graves in stratum II a². They are of three different kinds: a) simple jugs with spout, b) jugs with spout and handle

and c) coupled triple-jugs. The following features are common to all the jugs: a flat base, an almost globular body, a more or less cylindrical neck, which is generally low, but in jugs from shaft A often rather high and gradually widening upwards. The spouts are *tubular* and project obliquely upwards from the middle of the shoulder. Only two of the jugs are ornamented on the shoulder, to wit, A II s² no. 62 (Fig. 394) and AII s⁵ no. 65, both with high necks.

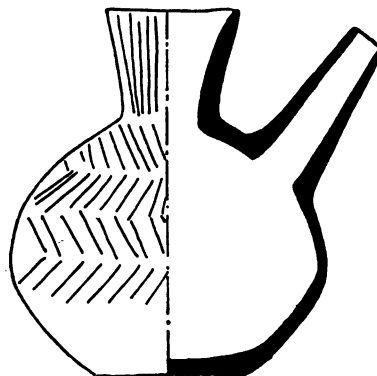


Fig. 394

a) *Simple globular spouted jugs*. As described above, these have a flat base and usually almost globular body; in a few cases they are slightly oval or slightly squat. The spout is placed on the middle of the shoulder and is tubular and tapering. All have necks, some cylindrical with out-turned rim, others slightly splayed with plain rim.

In Stockholm: AII s⁴ no. 43; AII s⁶ no. 197; EII s⁵ nos. 749, 751, 774; EII s¹³ no. 1429;

In Teheran: AII s² no. 62; AII s⁵ nos. 65, 66; BII s⁷ no. 564; EII s³ no. 625. One complete specimen was found in the settlement (BII 14 no. 219; +4.90 m.).

b) *Globular, spouted and handled jugs*. These jugs are shaped exactly like the spouted globular jugs above, apart from the handle. The handle runs from the rim to the middle of the shoulder opposite the spout.

In Stockholm: AII s⁶ nos. 196, 198;

In Teheran: FII s³ no. 999; GIIs⁹ no s. 1080, 1081.

c) *Globular coupled triple-jugs*. Three globular bottles are communicating, and one of the bottles is provided with a tubularly tapering spout. The shape of the bottles is exactly the same as that of the preceding vessels. A very high, tripartite handle from each of the rims unites the three bottles. The top of one handle seems to have been pierced for suspension.

In Stockholm: E II s¹³ nos. 1430, 1431.

In Teheran: E II s¹ no. 664 (Pl. LI, Fig. 393).

The pots belong to two child-graves, situated one above the other at +5.0 and +6.20 m. and perhaps related to each other.

2. *Globular bottles, mostly with round base.* (Figs. 395 and Pl. LI, 396).

The majority of the bottles have a round base. Only four of those found in graves have a flat base (B II s⁸ no. 560; B II s⁷ no. 565; E II s³ no. 620; G II s³ no. 989), being thus closely related to the small globular bottles from II b found in F II s⁴. The bodies are symmetrically globular with short, usually cylindrical neck. The neck has a flat, out-turned or splayed rim. B II s⁷ no. 565 has suspensionholes.

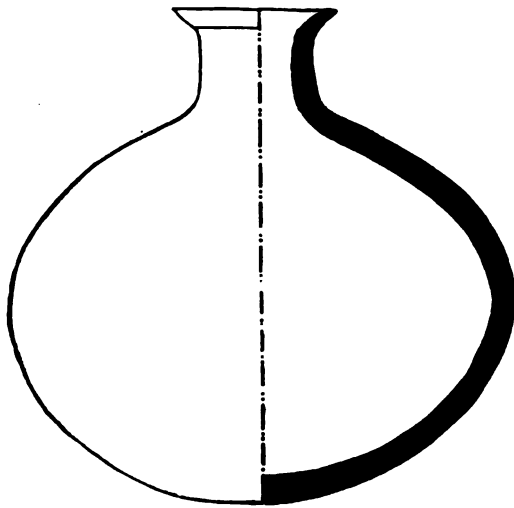


Fig. 395

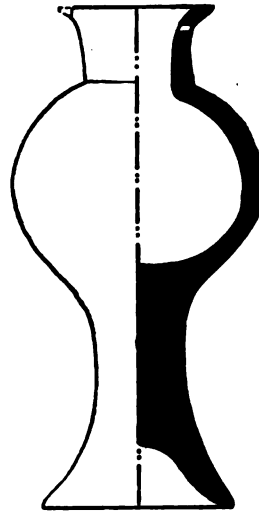


Fig. 397



Fig. 398

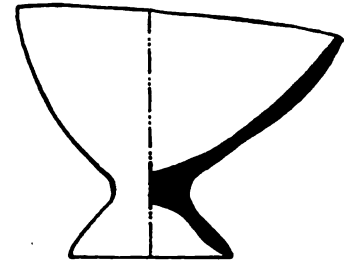


Fig. 399

In Stockholm: B II s⁸ nos. 559, 560, 562; E II s² no. 667; G II s⁸ no. 1077.

In Teheran: B II s⁷ nos. 565, 567; E II s³ no. 620; G II s⁹ no. 1082; G II s³ no. 989; H II s² no. 1762.

3. Footed vessels.

Such vessels are very rare in the older graves (D II s² and E II s⁶), and they are always provided with relatively high stems. In II a², footed vessels with a low stem or without stem occur more often in than outside the graves. There are no fewer than five different forms.

We have also a little *miniaturebottle* with short stem and hollow splayed foot, a globular body and cylindrical neck, with two holes for suspension. The rim is splayed, almost flat. Height: 10.0 cm.

In Stockholm: G II s⁸ no. 1078. (Fig. 397).

Another *miniaturebottle* of the same kind has a shorter stem and a fragmentary neck. The body is decorated with unbordered encircling hatchings alternating in two directions. This bottle still has its stopper. It is horizontally pierced at the top. Height: 7.9 cm.

In Teheran: F II s³ no. 1000. (Fig. 398).

Four vessels may be regarded as *footed chalices*, all with a splayed, hollow foot. The grave G II s⁸ yielded two such footed vessels. One of them (Fig. 264) has a short stem, hemispherical cup with out-turned rim, and an open beak-spout (no. 1076). The other has a rather deep cup with slightly convex, splayed sides and

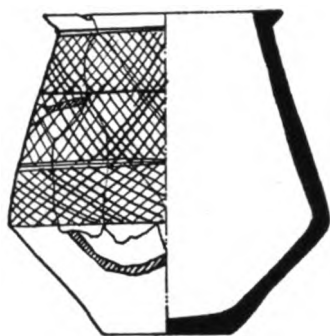


Fig. 400

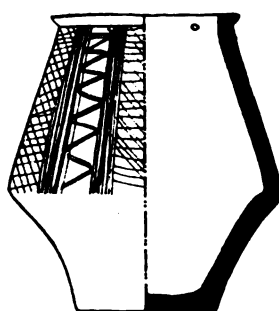


Fig. 401

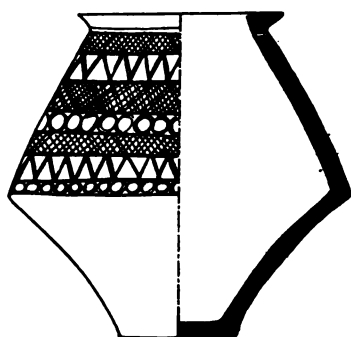


Fig. 401 a

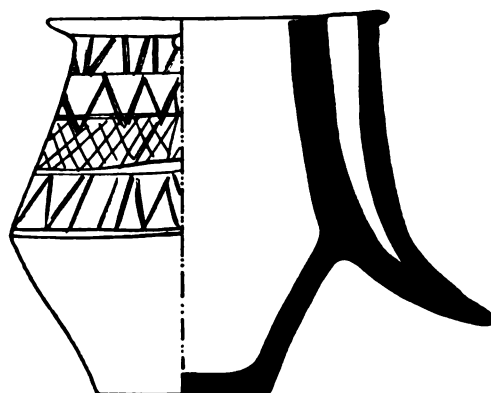


Fig. 402

plain rim (no. 1079; Fig. 265). The chalices E II s² 666 (Fig. 399) and E II s³ no. 623 have almost conical cups with plain rim.

In Stockholm: E II s² no. 666; G II s⁸ nos. 1076, 1079.

In Teheran: E II s³ no. 623.

Finally, there is a kind of »fruit-stand» or »chalice» with very splayed, conical cup (E II s³ no. 618; Fig. 236). It has a splayed foot and a short cylindrical stem, both hollow. In this respect it differs from the footed vessel in E III s⁶ (Fig. 223), the foot of which has a flat bottom.

In Teheran: E II s³ no. 618.

4. *Low, carinated, biconical jars with almost equally high belly and shoulder.* (Figs. 400, 401, 401 a and 402).

Such a vessel has already been treated in the chapter about an isolated grave find from stratum III (C III s¹; Fig. 344). Four others are known from stratum II, one from II b (B II s⁹ no. 642; Fig. 400) one (A II s⁴ no. 61) certainly from II a², the two others from the frontier-layer between II a and I. These four jars all have flat bases, accentuated, angular belly-lines and have two holes for suspension. The jars A II s⁴ no. 61 and E II s³ no. 622 (Fig. 236 and 401 a) have

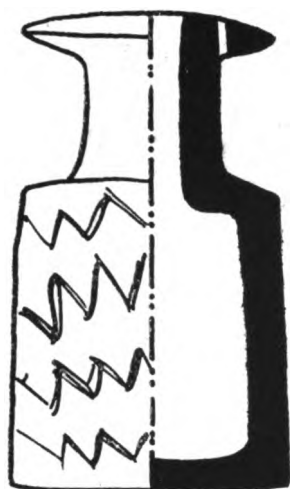


Fig. 403

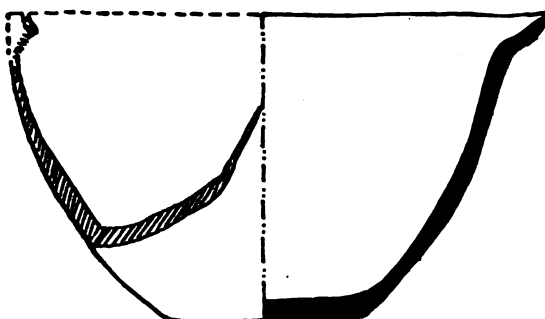


Fig. 405

concave bellies and conical high shoulders with short, out-turned rims. The jar E II s¹ no. 663 (Fig. 402) has a concave belly and shoulder, and out-turned rim, almost flat. This jar is provided with a very curious handle, fixed along the shoulder. It is coniform and hollow from above. An isolated »horn» of such a jar was found in C II. The jars are decorated on the shoulder with burnished ornamentation, on A II s⁴ no. 61 (+4.10 m.) arranged vertically as on the jar from C III s¹. The others have horizontal bands.

5. *Other vessels from graves (and from the settlement) in stratum II a² (and partly II a¹).*

The *deep bowls or goblets* from A II s⁴ no. 63, B II s⁸ no. 558 and B II s⁷ nos. 563, 566 have already been treated (page 186). A curious little object is a *square miniature-bottle* (Fig. 403), found in the rich grave E II s³ (no. 626). It is only 6.1 cm. in height. The base is square and flat, forming a right angle with the body, which is also square. The neck is tapering and has a wide, flat rim. The body is decorated with irregular zig-zag lines. The bottle is black. The shape would be more natural in alabaster. Some other vessels from the same grave will be discussed more suitably in connection with vases from II a¹.

A big, *oval-globular jar* (fragmentary) has already been mentioned under II b no. 7. It is F II 6, found at +5.30 (Pl. LII, Fig. 404). It is well decorated with crosshatchings in zones. Another jar of the same kind has been restored (Pl. LII, Fig. 404 b).

STRATUM II a¹

This stratum was not always distinguishable from the underlying II a², especially in shafts D, E and F; but there are certain vessels that may be described as repre-

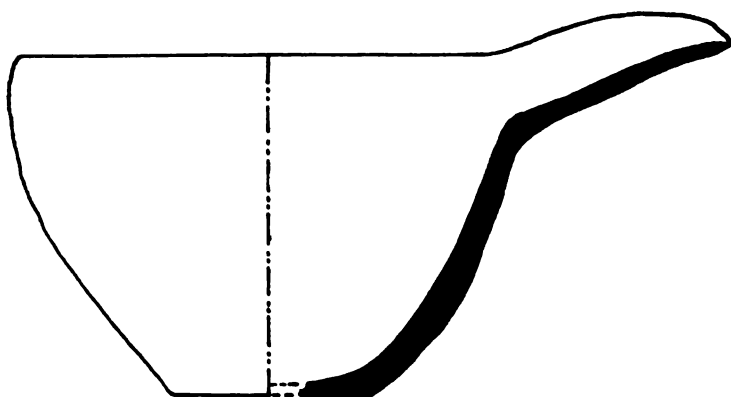


Fig. 406

sentative for II a¹. Such are the big *hemispherical bowls* with short or long and wide spouts, the coarse earthenware *cooking-utensils with handle*, and, from the settlement, the big *oval canteens with lugs*.

1. *Big hemispherical spouted bowls.*

The base is flat. The body is convexly curved and slightly splayed. The rim is plain.

a) *With very short open spout* (Fig. 405). There are two specimens from graves, one black (G II s¹ no. 748) and one red (G II s¹ a no. 841). A third specimen, black in colour, comes from the settlement (B I 7 a no. 90, +5.34 m.). The width varies between 19.9 and 23.75 cm.

In Stockholm: G II s¹ no. 748; G II s¹ a no. 841.

In Teheran: B I 7 a no. 90 (from the settlement).

b) *With long and wide trough-shaped spout.* (Fig. 406). The spout is here long, open, wide and blunt. The colour is black. The diameter varies between 18.4 and 20.1 cm. sandy grains and badly burnt. Traces of soot on the lower part of the body.

In Stockholm: C II s² no. 267; G II s¹ no. 746.

In Teheran: H II s¹ no. 1761.

Many spouts belonging to bowls of type 1 b were found in the settlement.

2. *Coarse earthenware cooking-utensils with handles.* (Fig. 407).

The coarse ware of the cooking-utensils is mat-red, non-polished, mixed with The base is flat. The body is oval, globular or convexly curved with slightly depressed shoulder. The neck is short, slightly concave, with plain rim. The handle runs from the upper part of the shoulder to the rim.

In Stockholm: C II s² no. 268; G II s¹ a no. 846; G II s¹ no. 747; G II 1 no. 847; G II no. 963 (the latter two both from the settlement).

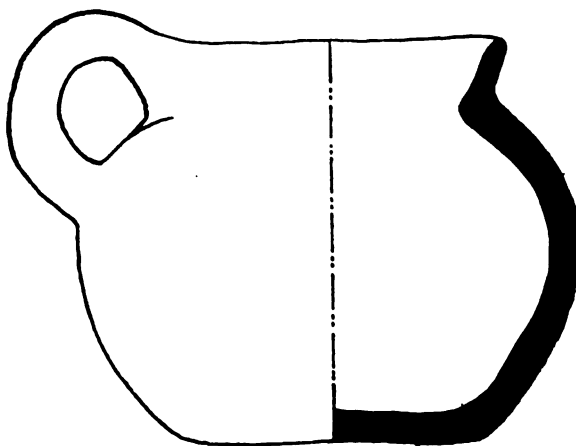


Fig. 407

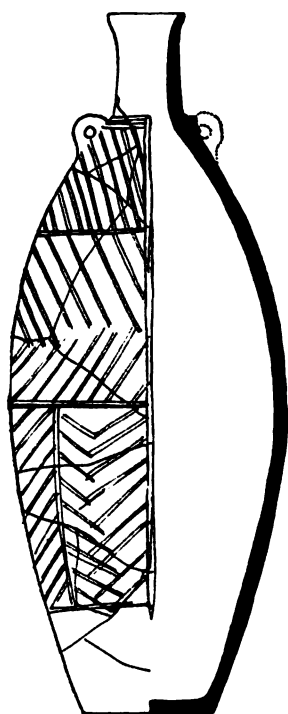


Fig. 408

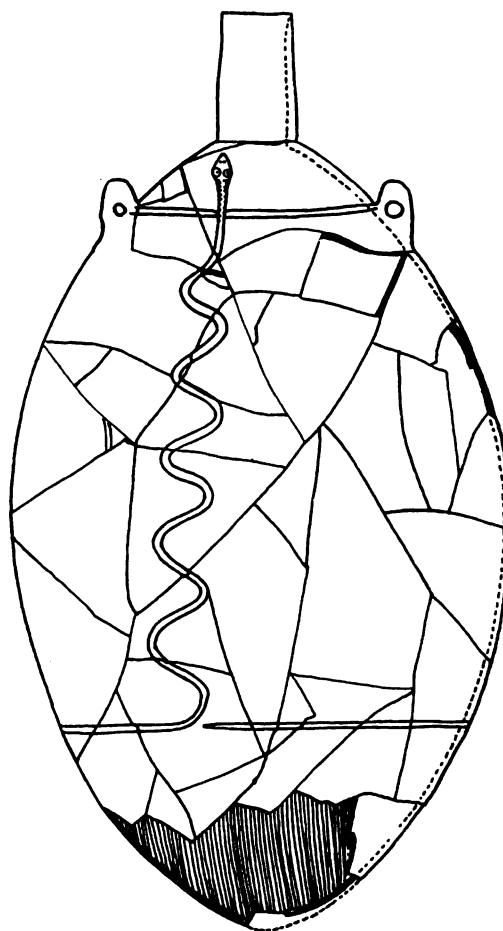


Fig. 409

In Teheran: G II s⁴ no. 984; H II s¹ no. 1760; B I 7 b no. 91 (the last-named from the settlement).

3. *Big oval canteens with lugs.* (Pl. LII, Figs. 408 and 409).

In his book: *Excavations at Tepé Hissar* (p. 182) Dr E. Schmidt gives the following description of a special kind of vessel: »The principal guide vessel of Hissar III C (the youngest layer) is the canteen with an oval, oblong or at times almost globular body, and a bottle neck. Two suspension handles with narrow perforations are on opposite sides of the shoulder or upper body, in some cases, ridges or grooves enclosed by ridges served as guide lines for the carrying cords.»

Two such entire canteens and some fragments were found in the settlement of Shah Tepé. The canteen B I 23 no. 136 (+6.20 m.; Fig. 408) has a flat base and a symmetrically oval, narrow body. The neck is high and cylindrical, slightly splayed at the top and with a plain rim. The body is decorated with vertical zig-zag lines from the neck to the lower part of the belly. There are two encirc-

ling ridges, one just below the neck and one uniting the two string-hole projections. From the last-mentioned line run three couples of vertical lines in relief terminating at the lower part of the belly. The colour is greyish black. Height: 37.0 cm.

The canteen E II—20 no. 1771. (Fig. 409), was found at the boundary between Ib and II a, thus in an earlier stratum than B I 23. It has a round base (not wholly preserved) and a narrow, high, cylindrical neck, slightly tapering towards the end. The whole body is decorated with vertical, bordered, zig-zag bands. An encircling line in relief united the two string-hole projections. Two vertical coupled ridges run from each string-hole projection to the lower part of the belly, where two serpents form an encircling line. The heads of these two serpents are immediately below the neck of the canteen while their bodies wind down over the canteen to the middle of the belly. The colour is brownish grey.

In Stockholm: E II 20 no. 1771 (in the settlement); one sherd with ridges.

In Teheran: B I 23 no. 136 (in the settlement).

The relief ornamentation is rather high and triangular in section. Whether they are of a piece with the walls or have been applied is difficult to say. Two fragments exist with a decoration of similar ridges.

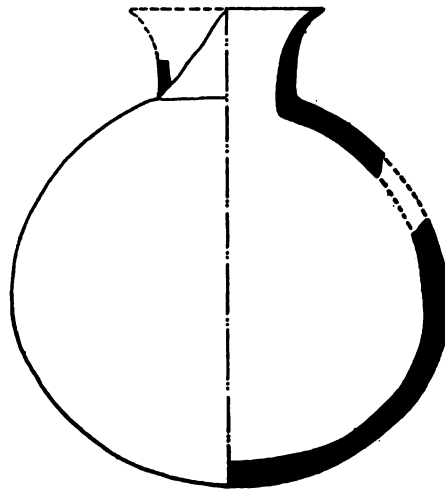


Fig 410

4. *Other vessels from graves in stratum II a¹.*

Besides a cooking-pot and a hemispherical spouted bowl, the grave C II s² contained three other big vessels showing certain affinities with earlier types. There are 2 *squat*, slightly *carinated jars* with very wide necks, splayed and relatively high (Fig. 213). The rims are in the one case plain (C II s² no. 264) in the other splayed (C II s² no. 266). The former is greyish black and is 17.55 cm. in height; the latter is brownish grey and 21.15 cm. in height. Finally, in the same grave, there is a *globular jug with handle* (no. 265; Fig. 213), flat base and high, wide and slightly splayed neck. The handle reaches from the middle of the shoulder to the rim. Brownish grey. Height: 19.0 cm.

The globular bottle with round bottom and relatively high neck, typical of stratum II a² was also found in II a¹ (Fig. 410); thus one specimen comes from H II s², no. 1762 (+5.65 m.), another from E II s², no. 667 (+6.30 m.). In the settlement they meet already in stratum II b. So for example in II b we have B II 23 no. 637 at +3.90 m. and F II 12 no. 1191 (+3.90 m.); then in II a², for example, we have B II 3 no. 192 (+5.10 m.), a miniature bottle, and no. 93 B I 14

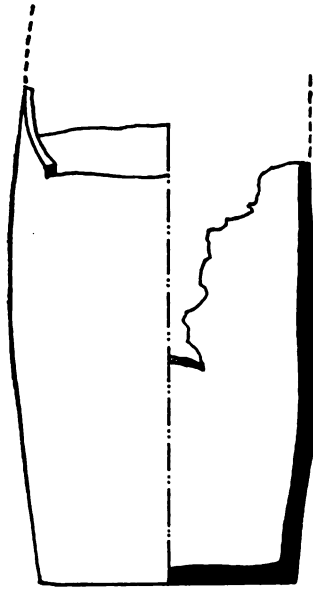


Fig. 411

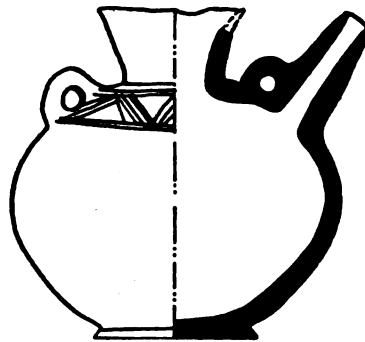


Fig 411 a

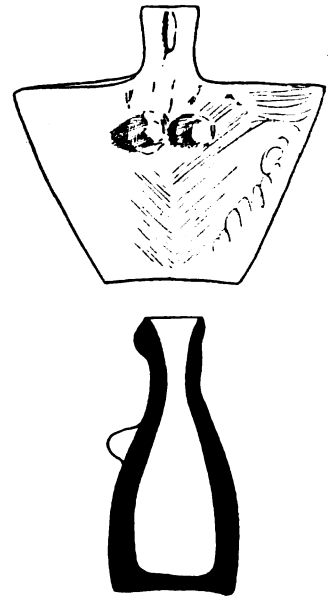


Fig. 412 a, b

(+5.40 m.), and finally in II a¹: B I I no. 89 (+5.97 m.) and B I 22 no. 127 (+6.20 m.). Of this type is also no. 844 F II 3 (+5.80 m.).

The *globular bottle with flat base* is represented only by one specimen. It has an almost globular, slightly squat body, and high, cylindrical neck with splayed rim. The decoration consists of burnished zig-zag lines and cross-hatchings in horizontal zones.

In Teheran: E II s¹ no. 665; +6.20 m. (Fig. 237).

A unique piece is the *squat jug with handle and very high neck* (Fig. 271) found in G II s⁴ (no. 983). It has a flat base and a convexly curved, squat body with accentuated belly-line. The neck is as high as the body, narrow and slightly tapering. The rim is shaped like a funnel. The handle runs from the upper part of the shoulder to the lower part of the neck. The colour is black. Height: 14.6 cm.

A *deep, almost cylindrical bowl or goblet* belonged to grave H II s³ (no. 1770; Fig. 274). It is rather fragmentary, only 9.0 cm. high. Perhaps it is akin to the *deep cylindrical bowl* found in F II s¹ (no. 752, +6.80 m.) (Fig. 411). This bowl is of considerable size as compared with the first mentioned. Height: 26.5 cm.

A combination of different late traits appears in the *bottle-shaped, globular, spouted jug* G II s² no. 835 (Fig. 267 and 411 a). The base is flat and somewhat raised — a unique trait. The body is globular. The spout is tubularly tapering, placed on the middle of the shoulder. On the upper part of the shoulder there are two vertical string-hole projections, one between the spout and the neck and the other opposite. The neck is concave and splayed and has a plain rim. On the shoulder

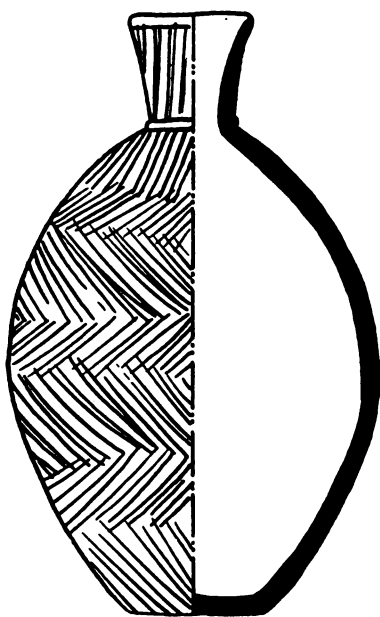


Fig. 413

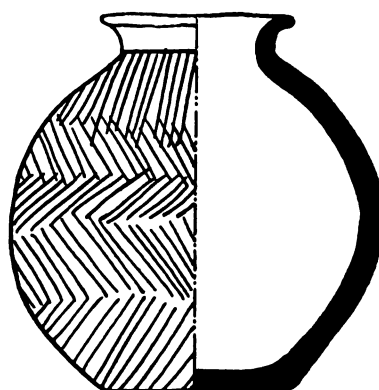


Fig. 414

between the two string-hole projections there is a zig-zag band bordered by encircling lines. The decoration is incised. The colour is black. Height: 13.0 cm.

A *female effigy vessel* (Fig. 412 a, b) was found in grave G II s⁷ (no. 1004) together with an alabaster vase. The base is flat, forming an ellipsoid. The body is trapezoid. The neck is tapering and has a plain rim. The nose and the breasts are modelled. The body seems to be patterned with vertical bordered hatchings alternating in two directions. Colour: grey black. Height: 14.5 cm.

Characterizing the transition between II a² and II a¹ are some beautiful *symmetrically oval bottles with high and slightly splayed neck*. (Fig. 413) The base is flat, the body rather narrow; the rim of the neck is plain. Below the neck there is an encircling line in relief on B II s¹ no. 148 and G II s³ no. 988. The body is covered with burnished, vertical, zig-zag ornamentation. Height from 25 to 18.7 cm.

In Stockholm: B II s¹ no. 148 (+5.80 m.). Fragments B II s¹ no. 147.

In Teheran: E II s³ no. 624; G II s³ no. 988.

Two *oval jars or bottles* from the grave E II s⁴ (nos. 630, 631; Fig. 239) are akin to the foregoing, but they are more depressed, and their necks are wide and splayed and have plain rims (+6.40 m.). They are not decorated.

The *globular jar* is represented in the transition layer between II a² and II a¹ by two specimens. They have flat bases, globular bodies, and short, almost cylindrical necks with flat, splayed rims. The decoration consists of burnished, vertical, zig-zag ornamentation.

In Stockholm: G II s² no. 834 (Fig. 414).

In Teheran: E II s³ no. 617.

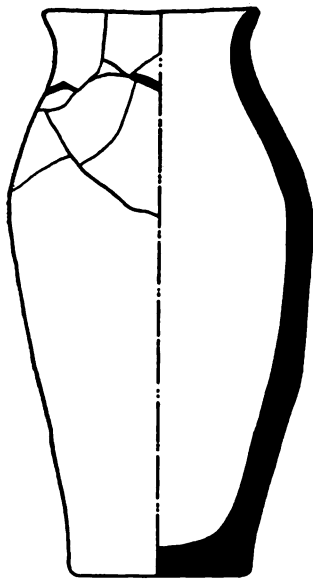


Fig. 417

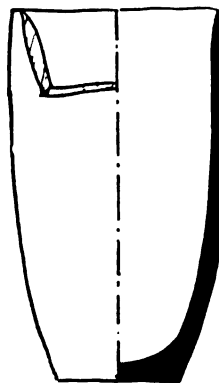


Fig. 419

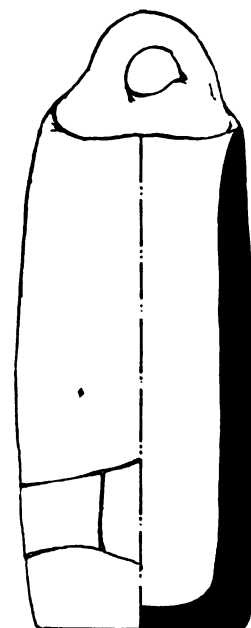


Fig. 420 a

SOME POTTERY TYPES FROM THE SETTLEMENT

We have so far dealt chiefly with such ceramic as has been found in graves, either *exclusively*, or else *also* in the remains of dwellings. A number of types of vessel have, however, been found only, or mainly outside the graves; and these will now be discussed. When vessels have been found singly in the earth, especially in a fragmentary condition, they have, naturally, a lower value from the point of view of dating than have finds that are made in graves or depots. As regards certain smaller fragments it is *possible* that they may have been wrongly listed. Most of the few completely preserved clay vessel types that in layer III are represented *only* outside the graves have already been discussed. We have now, therefore, to deal chiefly with types of grey or grey-black pottery from layer II.

1. *Relatively tall, almost cylindrical vessels (jars or bowls) with wide necks.*

These vessels have slightly convex bodies, a flat bottom and slightly splayed neck. They are blackish grey in colour.

No. 80 A II 33 (+3.70 m.) is 12.8 cm. in height and 5.7 cm. wide at the base. The upper part is damaged. (Pl. LII, Fig. 415).

No. 1167 F II7 (+4.70 m.) is 15.4 cm. in height and 4.5 cm. wide at the base. The neck is damaged. Colour, greyish brown. (Pl. LIII, Fig. 416).

No. 1766 H II5 (+5.40 m.): the upper half is rather wider in relation to the base

than is the case with the two other vessels. Height 15 cm., diameter 8.05 cm. (Fig. 417). All three vessels belong to layer II a. A similar vessel, »a unique form», has been found in Tepé Hissar III C.¹

2. *Relatively tall, cylindrical vessels without neck.*

These cylindrical, grey vessels have flat bottoms and plain rim.

a) One specimen, no. 1458 E II17 (+4.70 m.) is without lugs or handle and measures 26.1 cm. in height and 15.4 cm. in diameter. (Pl. LIII, Fig. 418). It is to compare with no. 752 F II s¹. Another vase, no. 571 B II17, measures about 10.2 cm. in length. The maximum width is 5.7 cm. The walls are slightly convex, the base 3.5 cm. in diam., the mouth 5.55 cm. (Pl. LIII, Fig. 419).

b) Cylindrical, only slightly convex vessel with *vertical handle* in the form of a semi-circle and standing on the upper edge. There is an intact specimen (no. 1018 G II5, +5.50 m.). Height 16.5 cm., diameter 6.6 cm. (Pl. LIII, Fig. 420 a).

This curious type of vessel may possibly have been intended to be hung on a wall. It was not so very rare, for 11 vertical handles belonging to such vessels have been found, for instance in C II and G II. One handle may have been found in E III, but this is uncertain. These handles are with one exception higher than they are broad. A vessel of this type (a »dipper») but with more tapering and rounded bottom part has been found in Tepé Hissar III B.² It is only 10 cm. in height. Small jar-shaped dippers with small loop handles over the rim were used in Thessaly during the Dimeniperiod (Thessalian II, about 2500—2300 B. C.)³

3. *Two vertical, curved handles,*

considerably broader than they are high, probably belonged to *kettles* with very wide diameters. In the one case the vessel is of grey, well-burnt earthenware, and the handle leans diagonally outwards. (Length 7.5 cm., height 3.5 cm.) The other handle is more vertical and belongs to a reddish brown vessel of earthenware mixed with gravel, precisely of the type that has already been discussed in connection with certain short spouts. (Length 8.7 cm., height 2.5 cm.) (Pl. LIII, Fig. 420 b, c).

4. *Plates.*

No. 1625 E II18 (+3.20 m.) consists of a large plate with rounded bottom. The sides are very much splayed and the rim is plain. For suspension there are two corresponding holes below the rim. The colour is greyish black. Height 9 cm., diameter 35 cm. (Pl. LIII, Fig. 421).

¹ E. SCHMIDT, Excavations at Tepé Hissar, Pl. XLIII, H3313.

² E. SCHMIDT, Excavations at Tepé Hissar, Pl. XXXIX, H.1734.

³ H. HANSEN, Early civilisation in Thessaly, p. 51, 74. Fig. 9.5.

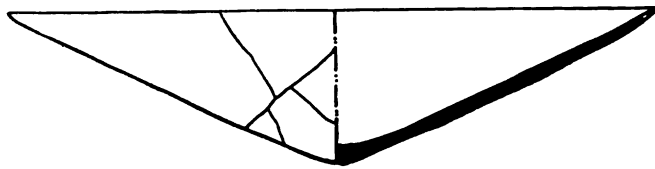


Fig. 421

5. *Oval-globular and other jars with handles,*

Such vessels *without* handles, and found in graves, have been described from layer II a. Numerous fragments of such vessels, that it has in some cases been

possible to fit together, have been found in the remains of dwellings. Amongst them may be mentioned no. 776 E II13 (+5.30 m.) and no. 714 E II12 (+6.30 m.). (Pl. LIII, Fig. 422 and Pl. LIV, Fig. 423).

The handles are so big that one can introduce one or several fingers into the opening, while the opening of the lugs — often only a string-hole — is as a rule too small for this.

One vessel that in respect of the handle is on the border-line to «lugged jars» is no. 307 A I 6 (+3.70 m.). This round-oval vessel with its low, splayed neck or rather rim has two vertical lughandles just above the widest part of the belly and opposite each other. Height 35 cm.; diameter 30 cm. (Pl. LIV, Fig. 424). The lugs are triangular in cross-section. We have several such loose lugs.

For the rest, there are in the remains of the settlement at least 8 *sub-types of vessels provided with handles.*

a) Probably round-oval, light-grey vessel with fairly high and narrow neck with splayed rim and two curved handles just below the neck. The handles are strongly curved and markedly oval in cross-section. On the inside of the vessel there are traces of «thumbing». Diameter approximately 18 cm. Height of neck 4 cm. Diameter of mouth 6.7 cm. (Pl. LIV, Fig. 425 a, b).

A very large vessel of this kind without handle was found in layer II.

b) In grave C II s² was found a «globular handled jug with high neck, wide and slightly splayed with a plain rim. (Fig. 213). The handle reaches from the middle of the shoulder to the rim.» The vessel belongs to layer II a,¹ that is to say, to the youngest prehistoric time. Of this type we have a number of fragmentary necks with handles. The diameter of the mouth varies between 10 and 11 cm. The colour is generally black. The handle has for the most part the *form of a band*, oval in cross-section. (Pl. LIV, Fig. 426).

c) One kind of *large vessel of light-grey earthenware* has a wide and splayed rim. Just below this there is a *curved, strong handle with round cross-section* and placed vertically. The majority of the handles mentioned under g) probably belonged to such vessels. (Pl. LIV, Fig. 427).

d) A fragment of a *large, light-grey «jar»*, possibly biconical and with horizontally attached, rather upward projecting *handle in the form of a loop*. (Pl. LV, Fig. 428). This has now been broken off. Such a loop-like, inwardly acute-angled handle occurs loose in the settlement.

The handles mentioned above are *round* or *oval* in cross-section.

e) In the graves A II s⁶ (+3.10 m.), F II s³⁻⁷ (+5.20 m.) and G II s⁹ (+4.90 m.) are found bottle-shaped, *globular, spouted and handled jugs* with a short, cylindrical neck, provided with a wide, out-turned, almost flat rim. The *handle* runs from the rim to the middle of the shoulder. Of this kind of handle, which is *round in cross-section* and generally of black earthenware and rather slender, there is a small number of intact specimens and a larger number of fragments. (Pl. LV, Fig. 429). Some few are of grey earthenware and are coarse in cross-section, up to 1.9 cm. and more. The handle forms a wide arch, whose greatest height lies as a rule below the centre. The greatest length of the arch may amount to 12 cm. with a corresponding highest width of 5—6 cm. This kind of handle may, however, have occurred already in the upper part of layer III, as appears from a vessel in grave E III s⁶, and *similar handles* have been borne by probably *biconical vessels with wide mouths*. (Pl. LV, Fig. 430).

f) We have remains of at least 10 *clay vessels of coarse*, badly burnt, brick-red or brown *earthenware* mixed with gravel. They are provided with curved handles, which project from the rather low, wide rim of the neck and reach down to the middle of the shoulder. The majority of these vessels are presumably *cooking utensils* of the same kind as those which were found in graves in layer II a¹ (e. g. G II s¹ and s⁴, H II s¹, C II s²). One such handle, however, seems to come from E III; but it is possible that there may have been some mistake in connection with the labelling. These handles are in cross-section *oval* or have the form of *coarse bands*. (Pl. LV, Fig. 431).

g) There is a large number of *loose, curved handles* that to judge from preserved fragments of upper rim were as a rule vertically attached and projected one or two centimetres below the rim. The latter was mostly directed diagonally upwards and outwards, occasionally more straight outwards. Presumably the vessels were of the type that has been described under c). A fragment with broad, flat, rather horizontal upper edge seems to have had a *handle* that ran more *horizontally*. (Pl. LV, Fig. 432). These handles are often almost circular in cross-section. At least fifty have been preserved. Of these, 4 come from F III (including one from F III s³⁻⁷) and 5 from E III, 1 from A II, 1 from H II and 3 from G II. Several of the vessels are light-grey in colour, others grey-black. Brown ones are rare. A curved handle, oval in cross-section is attached above a round, slightly concave surface belonging to a large vessel, probably a kettle of coarse, sooty earthenware mixed with gravel (from E III).

h) A small number (5 to 6) of handles resemble the foregoing in their strong curvature but have the form of oval bands in cross-section and project direct from the rim. The vessels were for the most part black in colour.

6. *Vessels with lugs or string-hole projections.*

In the graves in layer II b one often finds clay vessels with vertical string-hole projections, some being globular or biconical small jars while others are cylindrical bowls.

Of this ceramic there are numerous fragments, found in the settlement, including also string-hole projections. It is, however, evident that certain of these »projections» are so coarse as to approach handles, and that the vessel-forms were other than those above-mentioned. So there are such »lugs» with ridges on the outside and rather flat in the inside, thus presenting triangular cross-sections. The holes are more than 1 cm. in width. (Pl. LV, Fig. 433). One was found in D II. One such »lug» measures 9 cm. in height and 2.4 cm. in thickness. It probably belonged, like several others, to a vessel of the type mentioned in the beginning of section 6).

The lugs mentioned here are, certainly, vertically attached but are horizontally perforated.

Quite unique, therefore, is a string-hole projection found in E III and resembling a cylindrical, vertical tube. The height is 5 cm., outer width 3.9 cm., and the diameter of the string-hole at the outer ends 1.5 and 1.9 cm. (Pl. LV, Fig. 434).

7. *Braziers.*

»In Tepé Hissar, braziers or charcoal carriers occur during all sub-phases of Hissar III. They are cup-formed and provided with a stemmed foot.»¹ A footed brazier of coarse grey ware was also found in Tureng Tepé.²

About thirty fragments of at least 7, but probably more braziers have come from Shah Tepé. These belong to three different categories:

a) a fragmentary specimen with small, dense perforations. The ware is coarse, mixed with gravel, red outside, reddish grey and somewhat sooty inside. The vessel was originally bowl-shaped, probably with a diameter of approximately 12 cm., with slightly rounded bottom with a diameter of about 7 to 8 cm. (C II 27, +5.80 m.). It is impossible to make out whether the vessel had a foot (Pl. LV, Fig. 435).

2) a number of fragments of red, well-burnt ware of even consistency with sparse rather large perforations. (Pl. LV, Fig. 436). Portions have been found in A III, C III, C II and D II;

3) a number of fragments of black ware of the same consistency as in 2). One fragment shows that the vessel had the form of a bowl with flat bottom, the latter also perforated with large, rather sparse holes. (Pl. LV, Fig. 437). While the holes in the first two categories were generally made from without in, so that the clay shows a little raised wall round the inside of the hole,

¹ E. SCHMIDT, Excavations at Tepé Hissar, Pl. XXXVI, H. 5215; Pl. XLIII, H. 3304, 3300.

² F. R. WULSIN, op. cit., p. 9, Pl. XIII, 5.

one finds this wall in the case of the black ceramic often on both sides, indicating perforation both from within and from without. The vessels were rather large. Fragments have been found in A II and in the transition-layer between E II—III.

8. *Ladles*

Ladles with long handles and round, bowl-shaped blades were found in a fragmentary condition up to a number of 120. No specimen is so well-preserved that one can say definitely what form the bowl or «blade» originally had. A little miniature spoon with short, broken-off handle indicates that the circular bowl was rather high and had a narrow, flat base somewhat rounded-off at the edges. (Fig. 438). The diameter of this ladle is 3.65 cm. and the height 2.5 cm. As a rule only the handles are preserved. These may be up to 25.5 cm. in length, round in cross-section and generally pointed towards the end. (Pl. LVI, Fig. 439). The ladles are often of black polished earthenware, not infrequently of grey. To judge by the preserved fragments the upper diameter of the bowl seems to have amounted to at the most 15 cm. (Pl. LVI, Figs. 440 and 441a, b). The handle may at the thick end have a breadth of about 3.50 cm.; but a little grey spoon shows a cross-section of handle of only 1.5 cm. A coarse, red ladle-handle with admixture of gravel has in the preserved endpiece a thickness of 3.4×3.6 cm. A completely intact handle differs from the others in its shortness (9.9 cm.) and also in that its point is bent rather downward. The ladles are most characteristic of layer II; but 10 handles were none the less found in F III (including one in the mass-grave F III 3—7), 5 in C III and 4 in A I, C I (no. 159) and D I (2, including 1 in D I4). Furthermore, 10 are listed from A II, 2 from C II (C II1 and C II11), 2 from D II, 1 from G II and 2 from H II4. It is questionable if such ladle-handles were found among the rubbish from Dr WULSIN's excavations in Tureng Tepé; none are mentioned in his publication on the same.

In Tepé Hissar no ladles with long handles were discovered. In hissar III B, on the other hand, was found «a crude, grayish brown and fire-worn ladle» (H 2141), and the same form occurs in III C (H 2462)¹ as also a miniature ladle² (H 3026). The bowls are coarse, deep, flat or more rounded in the bottom; the handles short.

9. *Vessels with profiled border under the rim*

We have at least 7 fragments of no fewer than 5 large, deep vessels with rounded rims under which there is either a broad horizontal «border» in the form of a deepened groove or a couple of ridge-like, parallel «borders» in relief, produced by narrow sunken, intermediate grooves on the sides. (Pl. LVI, Fig. 442). Three of these vessels were originally black and polished, two more greyish brown. One black

¹ E. SCHMIDT, op. cit., pp. 180, 184; Pl. XXXVI, XLIII.

² Ibid., Pl. XLIV.



Fig. 438

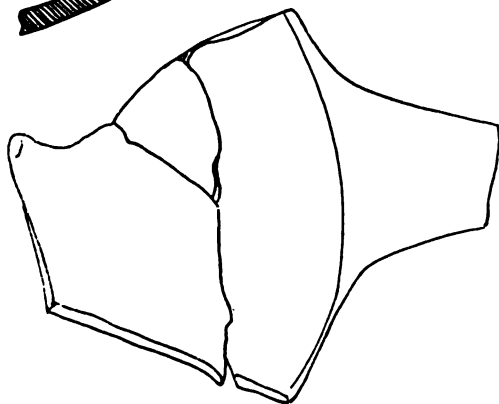
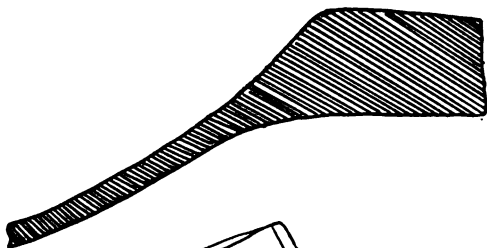


Fig. 440

vessel has had a very broad, rather transversely cut-off, grooved tongue of the kind belonging to layer II a¹ that has already been described. The vessel with the double borders must have measured originally about $\frac{1}{2}$ —1 meter in diameter. A grey vessel has a downward pending, hook-shaped ear 4.1 cm. in length below the »profiling». (Pl. LVI, Fig. 443)

10. *Vessels with vertical relief-ornamentation on the neck and at the rim.*

A fragment of rim of a grey-brown, unpolished vessel, probably a small, comparatively thin-walled cooking utensil, has in a couple of places vertical strips of clay, triangular in cross-section, that have been stuck unto the neck and around the rim. These ornaments were probably six in number and surrounded a rim with a diameter of at the most 10 cm. (Pl. LVII, Fig. 444).

11. *Fragments of fruitstands.*

a) *Bowls.* The few intact »fruit-bowls» from graves and depots have already been

discussed. They belong to the transition between layers III and II b. In the settlement were found a further 30 fragments or so belonging to fruitstands of various kinds. A fragment from H II₄ seems to have belonged to a »cuppa» with broad rim and round, deepened bowl of the same kind as no. 1773 F III 17. (Fig. 346).

Another fragmentary bowl of black, polished, thick earthenware has a somewhat narrower, rounded edge with a wider, shallow deepening. The rim is about 3 cm. in breadth, but the whole width of the bowl was about 28 cm. The thickness of the earthenware at the rim is 2.1 cm., but further in only 0.8 cm.

The other fragments seem to have belonged to flat bowls with a raised rim of the kind occurring in E III s⁶ (the large fruit-bowl no. 1704). Two fragments, one of which derives from C II, have a short little tongue, 1—1.5 cm. in length, projecting from the edge. The bottom of one of the fragments has a ridge-like thickening that has followed the direction from the tongue to the stem. (Pl. LVII, Fig. 445 a, b). Judging from notes on the fragments, a couple of them derive from C III and F III, 2 from C II, 2 from G II and 1 from A II. The colours are grey, grey-brown and black.

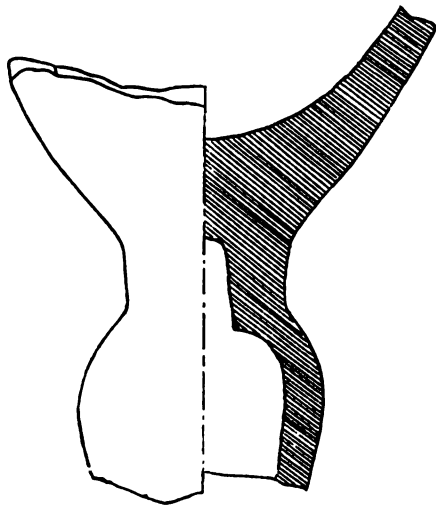


Fig. 448

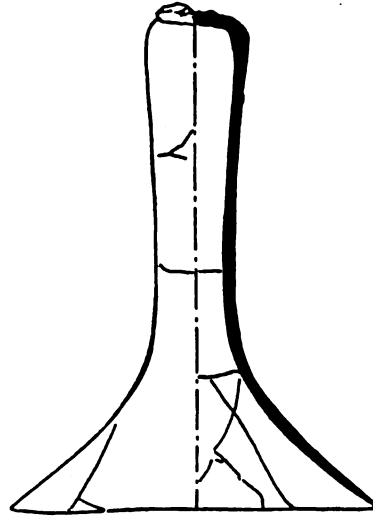


Fig. 449

As has already been pointed out in a previous chapter, a number of fragments provided with *ribbed, grooved or incised patterns* have also belonged to the bowls of fruitstands.

b) *Stems.*

The remains of about a dozen ribbed or grooved stems have already been discussed. We have definite examples from A II and C III. More common are *undecorated stems*, and we have at least three different kinds of these:

1) coarse, cylindrical, hollow stems, closed at the upper end (under the bowl) and open at the bottom (towards the foot). (Pl. LVII, Figs. 446 and 447). The height may be as much as 17 to 18 cm., and cross-section as much as 4—5.5 cm. The cylindrical stem is commonly widened towards the foot. At least a dozen such fragmentary stems have been preserved, two of which, in a very fragmentary state, seem to derive from F III and C III. They evidently belonged originally to fruitstands related to the piece that was found in grave D III s², although probably without inner bowl;

2) shorter or longer, column-like, hollow stems with a cornice-like upward widening a little below the bowl, and with a high, wide foot. Intact fruitstands with such stems are preserved in E III s⁶ and F III 17, as has already been mentioned. Of about 10 fragmentary stems 7 are very coarse and stout. Three of these were found in C III and F III, 1 in G II. (Fig. 448). The thickened part has a diameter of about 6 cm., and the remaining column of about 3.5 to 4.5 cm. A further 3 or 4 stems, one of which has the foot preserved, are much narrower, with a diameter of column of about 3.5 cm. and with only slight upward thickening. (Fig. 449).

3) massive, rather narrow, cylindrical stems, crowned with a low frustum of a cone, wide at the bottom, on the upper part of which an externally conical, intern-

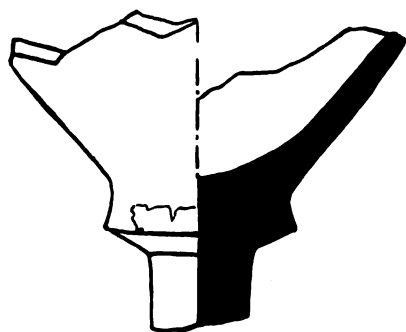


Fig. 450

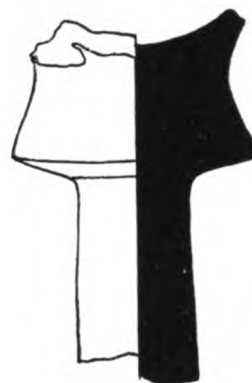


Fig. 451

ally round bowl has been placed. (Fig. 450 and 451). The appearance of the foot is unknown. The diameter of the stems varies between 2.2 and 2.7 cm. It is not out of the question that certain fragments that have previously been regarded as ladle-handles belonged instead to narrow-stemmed fruitstands. There are eight such fragments. One derives from C III. Similar stems have been found in Tureng Tepé. Fragmentary massive stems of coarse red ware will be treated later.

12. *Footed chalices.*

These are not common in the Shah Tepé graves. Apart from the chalices from grave E III s⁶, whose foot borders upon a stem or should be regarded as such, there are 7 chalices from E II s³, F II s³ and G II s³, all in layer II a, with feet. The foot of a vessel in E II s³ may even rather be counted as stemmed.

From the settlement we have, besides the already mentioned fragments of conical, hollow feet closed at the base and belonging to stemmed fruitstands, also feet of other types.

a) Three small feet with short, massive, cylindrical stem. The feet are very slightly conical, one of them having a flat under-side, one a very slightly concave and one a rather more concave under-side. The diameter of the column is from 1.7 cm. to 2.4 cm. The diameter of the foot is 3.7 — 5 cm. (Pl. LVII, Fig. 452 a, b).

b) Three small, massive, conical feet, from the upper surface of which the bowl begins without transition. The bottom is flat. Diameter from 3.6 to 5.2 cm. (Pl. LVII, Fig. 453).

c) Six small and medium-sized, more or less pronouncedly conical feet with the base concavely hollowed out. One of the feet has a short stem about 2.5 cm. in height, hollowed out from below. One specimen was found in F III. The diameter varies between 7.8 and 4.8 cm. (Pl. LVII, Fig. 454 a, b).

d) Two rather large, slightly conical feet, concave on the underside and with hole in the middle, that continued in a cylindrical stem. The diameters are 12.2

and 10.3 respectively. The smaller one was found in A II. Some other fragments presumably also belonged to such feet. (Pl. LVII, Fig. 455).

13. *Miniature vessels.*

Real miniature vessels sometimes occur in the graves, e. g. in A II s⁶, B II s⁷, E III s⁶, E II s³, F III s¹, F II s⁴, F II s³, G II s⁸, but also in the settlement.

A little semi-round bowl of light-grey clay on a short broken off stem derives from C II. Diameter 3.5 cm. (Pl. LVII, Fig. 456).

A little, low, coarse bowl with a flat bottom and slightly outwardly sloping walls has been manufactured by the thumbing of grey clay. Diameter 5.5 cm. (Pl. LVIII, Fig. 457).

One intact and three fragmentary globular bottles agree with larger such ones from II a². They are well-made, of black or grey earthenware, have short neck and horizontally splayed rim perforated with two holes. A bottom was found in D II, an intact bottle in B I₁ (no. 89; Pl. LVIII, Fig. 458). Rather similar is the miniature bottle no. 458 A II, which diverges in its narrow, flat bottom. The diameter is at the most 5.5 cm. and height 5.6 cm. The neck is missing. (Pl. LVIII, Fig. 458 a)

A pear-like bottle, no. 480 C II, with narrow mouth, seems to have been decorated with burnished ornaments. Height 5.5 cm., width 4.7 cm. (Pl. LVIII, Fig. 459).

From F II derive two egg-shaped miniature vessels with narrow, flat bottoms and rather wider mouths. (Pl. LVIII, Fig. 460). The lower part of a probably similar vessel is coarse and thumbed and has a somewhat rounded bottom. Diameter 4.2—4.5 cm., height over 6 cm.

14. *Vessels with relief ornaments*

Some vessels or parts of vessels with relief ornaments have already been treated, viz. jars and bowls from stratum III—II, the canteens and some spouts with encircling lines. But there are also others: A. a bowl with flat base, slightly splayed sides and plain rim. Horizontally the body is squarish, each side in the square being somewhat curved. Of this bowl we only know three fragmentary sides. (Pl. LVIII, Fig. 461 a). The intervening of these sides has a vertical line in rather high relief running from rim to base in the middle of the side. Below the rim forms a downturned lug. The opposite, missing side may probably have been decorated in the same way.

B. Fragment of probably *globular vessel* with open spout projecting from the mouth and ornamented with double *ridges in relief* and intersecting each other. The ornamentation reminds one of that which one finds on the oval «canteen» with snake-figures that was found in layer II a¹. (Pl. LVIII, Fig. 461 b).

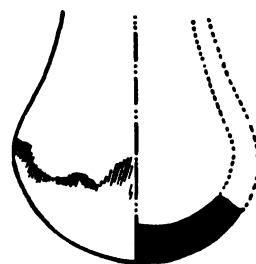


Fig. 459



Fig. 465



Fig. 466 a

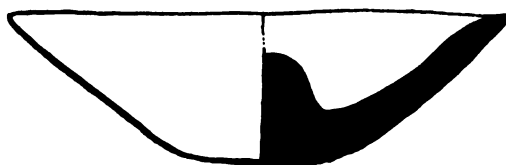


Fig. 466 b

15. Lids.

Certain clay vessels, especially the small biconical ones with string-holes, were provided with lids, though vessel and lid were seldom found together. The lids fall into three main categories:

1) *Small round lids*, generally with flat under surface and a slightly rising, conical top with a sharp point in the middle. (Pl. LVIII, Fig. 462; no. 1036 E II 17). The under surface was in some cases slightly concave (no. 1418 F III), and the sharp point in the middle rather longer and more in the form of a ridge (no. 1046 H I; Pl. LVIII, Fig. 463). In one case (no. 619 E II s³, +6.10 m.), the lid was convex on the under side with a concave top having a longish knob. These lids are generally provided with two string-holes near the edge, just opposite one another. The diameter varies between 3.7 and 9.9 cm., and the height between 1.3 and 2.75 cm. *Seventeen* such lids were brought away, nine of them being preserved in The National Historical Museum. Two were found in graves (no. 452 B II s⁹ and no. 619 E II s³; Fig. 236). *Four* specimens derive from layer III (B, E, F), *one* from layer I (H); but they are characteristic of layer II (C II 41 no. 294; D II; E II no. 884; F II no. 1092; F II no. 1091; F II no. 1243, G II no. 1366, 1367).

2) *Large, pan-like lids* with a curved handle in the middle of the flat top; the pendant edge is often embellished with burnished ornamentation. The smallest of these lids (no. 1126, F II s⁴ a; Fig. 249) measures 10.7 cm. in diameter and 5.35 cm. in height, while the largest (no. 1512 E II 16) measures 15.15 cm. in diameter and 6.15 cm. in height. The lids sometimes have the form of a strongly truncated cone, the upper surface having a considerably shorter diameter than

the pendant edge (e. g. no. 1322 G II, with a diameter of upper surface of 10.7 cm., a diameter of lower surface of 15.1 cm. and a height of 7.0 cm.; Pl. LVIII, Fig. 464). Five such lids, all intact or almost intact, were brought away, two of them being found in graves (no. 1126 F II s⁴ a (+4.55 m) and no. 1512 E II s¹⁶). These were found only in layer II (e. g. no. 1356 F II). In addition there are nine fragmentary lids, four of which have handles intact (from D II and one from D III) while in the remaining five cases the handles have been knocked off.

A sort of transitional form between these two forms of lid was found in A II. This is a little flat lid with oblong knob in the middle and rather drooping edges. The lid is only half intact, but the original diameter was probably about 9 cm. and the height about 2.3 cm. (Fig. 465).

3) *Lids with concave upper surface and a curved handle*, and with a small flat under surface. One specimen (no. 1767 H II8; Pl. LVIII, Fig. 466 a) is only half intact. It measures 21.4 cm. in diameter and 3.65 cm. in height. There are two further fragments. Jar-covers of the same form but with a knob instead of the curved handle were found in Jemdet Nasr and in Sari-Dheri, India.¹) A lid of the same form with a knobhandle belongs to the Shah Tepé-grave E II S³, no. 619 (Pl. LVIII, Fig. 466 b).

As regards lids from Tepé Hissar, these diverge somewhat and are of two different kinds. ERICH SCHMIDT says:² »Vessel lids are frequent in Stratum III only. The characteristic specimen is a circular disk (H 3106) with a rectangular handle perforated for suspension. Another type of Hissar III lids (H. 1895) — — — is a concave cone with two perforations at opposite sides of the periphery and an additional hole through the apex.» The apical hole is lacking in Shah Tepé lids.

In Tepé Hissar II was found also a vessel-lid consisting of a flat disc with »two perforations at opposite points of the periphery».

16. Spouts.

In the older layers of *Stratum III* there are no clay vessels with spout. These are found first in the *intermediate zone towards stratum II b*, where we find biconical vessels with *hollow, trough-shaped* spout of medium length fixed at the mouth of the vessel, tapering towards the top (e. g. no. 1701 E III s⁶, +2.35 m; Fig. 223) and no. 1774 F III17). The same richly furnished grave (E III s⁶) also contained a biconical vessel with *tubular spout* fixed at the lower part of the shoulder. The end of this spout is closed, but perforated with *three small holes* (cf. also no. 1328 F III1, +2.70 m, a vessel in E III and a similar vessel in E II s¹⁹ no. 1694, +3.00 m). A small, *short, open lip* characterizes certain »fruit-bowls» on a tall foot, one of

¹ MACKAY, Excavations at Jemdet-Nasr, Pl. LXVII, figs. 25—27. SIMONE CORBIAU, New finds in the Indus Valley, Pl. V, 2, Fig. 4, 3 (Iraq IV, 1, 1937).

² E. SCHMIDT, op. cit. pp. 185, 117.

which was found in E III₃ (no. 1166 +1.85 m) together with a vessel of the kind first mentioned (no. 1164 E III₃ a; Pl. LVIII, Fig. 467). It has also been possible to restore a huge storage bowl with a black, well-polished surface and a relatively *short, trough-like, open, horizontal spout attached at the mouth*. The vessel may belong to layer III (Fig. 361).

In II *b* we find cylindrical clay vessels with a rather *short*, tongue-shaped spout (no. 503 C II s⁶, +2.75 m. and no. 536 C II s¹², +2.4 m.; Figs. 209 and 207).

Higher up in II *b* near the boundary to II a² are found round-bellied vessels with a spout attached at the shoulder. The *spout is partly tubular* and points obliquely upwards; it is open at the top and in front, *cut off horizontally and curved in the form of a beak* (no. 377 C II 64, +4.30 m.; no. 1127 F II s⁴, +4.55 m.).

In stratum II a² are found new forms. Typical of these is the small, more or less globular jug with *completely tubular spout*, projecting obliquely upwards from the middle of the shoulder. There are numerous specimens, and to the same group belong also triple vessels with the same kind of spout. The same form of spout recurs in some few curious vessels in II a,¹ such as no. 835 G II s² (+6.0 m.); it would seem that certain spouted vessels that are typical for II a² survive in II a¹ (no. 625 E II s³, +6.10 m.; no. 664 E II s¹, +6.20 m.).

To II a² belong further some semi-spherical vessels, (one of them having a foot), provided with *spouts* of medium length, *open, and trough-shaped*, like that which one sees already on biconical vessels from the intermediate zone between strata III and II *b* (no. 1076 G II s⁸, +5 m.; no. 973 F II 5, +5.30; Pl. LIX, Fig. 468 and Pl. LXXXIX f).

The youngest spouted vessels that are found in II a¹ are semi-spherical large bowls with narrow, flat base. The spout consists of a *broad, open trough, forming about a quarter of a cylinder in cross-section*; it is generally rather long but sometimes consists merely of a short lip (no. 746 G II s¹, +6.5 m.; no. 748 G II s¹; no. 761 H II s¹, +5.7 m.; no. 267 C II s², +6.15 m.; no. 91 B I 7 b, +5.34 m.).

In Shah Tepé were found further about 280 loose spouts, of which the relative levels and dates can generally be determined, partly on the basis of direct notes, partly on the basis of agreement with the whole vessels already mentioned, which for the most part comprise burial gifts.

1) Between 60 and 70 spouts are of the kind that projects horizontally from the mouth of the vessel and has a triangular aspect in side-view. They have an open, concave, trough-like form, tapering towards the tip and lack the vertical bridge that projects up over the base in another type of spout (Pl. LIX, Fig. 469). The edge of the vessel at the point of attachment is almost horizontally flattened and shows that the vessels as a rule were biconical in shape (as in no. 1701 E III s⁶ and in F III 17) and often rather large. Other spouts belonged to round vessels. About 10 spouts from C, E and F derive according to the inventory from layer III, which is probably the case with the majority. Six specimens are

listed as found in B II, C II, G II and H II. A couple of such spouts of rather smaller size belonged, as has already been mentioned, to tall, cylindrical vessels.

The methods of manufacture of the spouts are apparent from various finds. One method has been to roll out a thin clay cake, which has then been folded double, shaped into a spout and stuck fast to the vessel around an opening of the desired size, after which operation a more careful shaping of the tip has been performed.

2) Another sort of related *open spouts* (50 to 55) also projects from the mouth of the vessel either horizontally or slightly upward-pointing; but the wall of the vessel continues vertically above the hole that opens into the vessel. (Pl. LIX, Fig. 470). In more than two-thirds of the cases the wall lies as a bridge at the same level as the upper edges of the spout; in the remainder, on the other hand, the wall projects a little above these. (Pl. LIX, Fig. 471). In some cases the projecting part slopes diagonally inwards and actually covers a part of the channel at the base of the spout. These latter spouts are as a rule comparatively short and of even breadth. The vessels to which they have belonged seem to have been rather large and almost globular. The majority derive from layer III, some also from II b. Most of them are grey in colour, some black and polished. The length of spout varies up to between 10 and 3.10 cm.

3) There are further at least 17 fragments of crude, in almost all cases unpolished, kettle-shaped cooking utensils of clay, provided with short, grooved *spouts* projecting from a hole situated two or three cm. below the rim of the vessel. (Pl. LIX, Fig. 472). The ware is thick, and mixed with gravel. Six fragments have a light-red brick colour, and the rest various shades from brown to black, often with traces of soot. The upper edge is often very much thickened, up to 1.6 cm. In one preserved specimen the mouth diameter amounts to 35.5 cm. and the height to 24 cm. Three specimens whose level has been determined derive from C III, E III and F III, and one from the bottom of A II.

Large, kettle-shaped cooking utensils of clay were found in several places outside the graves, as a rule in a rather damaged condition. Such may be mentioned from C III (+1.10 m.), F III (+2.50 m.), G III6 (+1.2 m.), D III. A couple of similar clay kettles of much younger date were found in H II a. The majority of the appertaining spouts, however, probably belong to layer III in Shah Tepé.

4) Allied with the foregoing is an *open*, short and broad *spout* that is covered above the round mouth-hole by a portion of the horizontal rim and on the under-side provided with a downward-pending beak. This is perforated, just under the spout, with a fair-sized, horizontal hole, so that one gets the impression of a bird's head with eyes. The spout with the part of the vessel belonging to it was found in E III. (Pl. LIX, Fig. 473).

5) In *four* specimens we have a curious type of spout that is known from

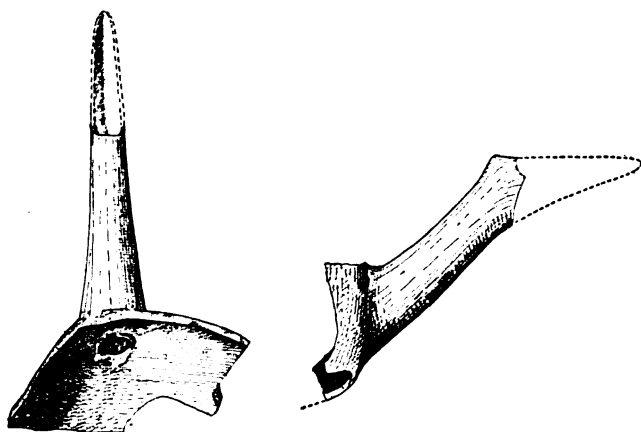


Fig. 476

North Iran, from, for example, Tepé Hissar, III C.¹ This is a tubular spout with very short, diagonal lyupward-projecting neck, continuing in an open, horizontal groove, long drawn-out in front but also provided with a short lobe, drawnout backwards towards the edge of the vessel. All four specimens from Shah Tepé are damaged. Two are of grey earthenware, two of light-red, smoothed but unpolished ware. One such grey, polished

spout was found in G II (Pl. LIX, Fig. 474 a, b)), and the other three probably belong to the same layer. (Pl. LIX, Fig. 475, red).

6) There are about *ninety* (90) spouts belonging chiefly to round pots. These are characterized by a longish, tubular part, the continuation of which consists of a mouthpiece curved in the shape of a beak, open, grooved and cut off horizontally. (Pl. LX, Fig. 476). The tubular part is sometimes very long in relation to the grooved mouthpiece (10.7 : 6.3 cm.); and the backs form an angle of about 100° with each other. (Pl. LX, Fig. 477). In this case the spout has projected rather steeply upwards. In most cases, however, the angle is rather slight, and the spout has projected fairly horizontally. The open channel may be longer than the tubular part (e. g. 10.2 : 7.5 cm.). The earthenware is generally grey in colour. Of these spouts 5 were found in A II, 1 in C II, 6 in C III, 1 in D I⁵, 3 in D II, 2 in E III, 1 in F II and 15 in F III (of which number one was found in the grave-complex F III³⁻⁷, 4 in G II, 1 in H II⁴, and the rest without definite data as to level). It thus seems to be beyond doubt that the type of vessel with this sort of spout begins to occur already in layer III, probably in the upper part (23 specimens), and continues in II b right up to the boundary to II a². The single find in D I is of no real importance. A miniature vessel has such a short, upward-pointing spout. Spouts of this kind seem also to have been manufactured in the way described above, a flat clay cake being rolled into a tube which has then been stuck fast around the hole in the wall of the vessel.

7) *Four* spouts of this kind (one of them from C II²⁶, +5.60 m.) are characterized by a generally black-polished slip and three ringformed ridges around the tube. (Pl. LX, Fig. 478). One of these ridges lies almost immediately next to the vessel-

¹ E. SCHMIDT, Excavations at T. H. Pl. XLI H. 3511. E. SCHMIDT, Tepé Hissar Excavations 1931, Pl. CXVI, H. 502, H. 420.

wall. The outer opening is oval, the inner one more circular. All four spouts are rather badly damaged.

It has already been mentioned that a couple of whole vessels with such partially tubular, beak-like spouts have been found fairly high up in layer II b near the boundary towards II a². The above-described spout with ring-formed ridges, C II 26, lay definitely in layer II a²; and this type probably belongs to a younger stage of development. The ring-formed ridges possibly constitute a sort of reinforcement.

A couple of long, grooved, narrow spouts — one brown in colour and found in F III (length 16.8 cm., breadth 2.7 cm., depth 3.3 cm.), the other black and rather widened at the broken-off base — may possibly, at least in the first-mentioned case, be the beak-shaped continuations of a tubular part. (Pl. LX, Fig. 479). It is, however, possible that the spouts are of the long type that we know from Susa I c¹ and from Tepé Sialk IV²; and one recollects a round silver vessel from Uruk III with similar long, open spout.³

8) On the boundary between the beak-formed spouts discussed above and the purely tubular spouts there is a little group (5 specimens) that probably belonged to round jars or pots. The spout is tubular with a diagonally cut-off mouth. It projects from the vessel-wall at a distance of one or two centimetres below the mouth of the vessel. While in general the spout tapers off towards the mouth, the diameter in one of these spouts increases towards the mouth. (Pl. LX, Fig. 480). They were found in layer II. No further particulars as to their level are given.

9) A dozen spouts are tubular, cut-off transversely at the end and as a rule strongly tapering (Pl. LX, Fig. 481 a, b). The majority are also rather short (4—6 cm.). A couple, however, are longer (at least 9.6 cm.). They were found in layer II a¹, with the exception of one specimen, which may possibly have been found in F III, for it has the same yellowish »patination» as we find on a tubular spout with 3 small holes that was also found in F III.

10) Three tubular spouts are almost completely cylindrical with wide mouths. (Pl. LX, Fig. 482). The first is 2.2, the second 2.5 and the third 2.8 cm. in cross-section. The lengths are 5.6, 4.5 and 4.7 cm. respectively.

Such a tubular spout is of interest because one can so well study its attachment to the preserved fragment of vessel. This has had a tall, narrow, cylindrical neck; then the completed spout has been stuck in through a hole in the wall of the vessel just below the neck, a portion of spout more than one centimetre long being allowed to remain inside. (Pl. LX, Fig. 483).

Some tubular spouts have broken-off tips, but are probably to be referred to this category.

¹ G. CHILDE, *New Light on the Most Ancient East*, Fig. 89, 8.

² R. GHIRSEMAN, *op. cit.*, Pl. LXXXVIII.

³ V. CHRISTIAN, *op. cit.*, Pl. 132.

11) The youngest spouts (at least 14) that are characteristic of layer II a¹ and that originally belonged to deep bowls with flat or rounded rim are *broadly grooved* (trough-like or resembling a quarter to a half of a cylinder in section) and of fairly even breadth with the ends almost transversely cut-off (sometimes almost rectangular). (Pl. LX, Fig 484 and Pl. LXI, Fig. 485). As an example one may give the measurements of one of these spouts: length 10.2 cm., breadth at the base 7.6 cm., at the mouth 6.7 cm.; greatest depth 3.2 cm.

One such spout is very short, only 3.8 cm.; another is rounded and tapers towards the end. The measurements of such a spout are 5.7 × 5.5 cm. Two specimens were found in A II and two in A I (A I 6), where they had been thrown up in connection with some later diggings. Most of the vessels to which they belonged were black or blackish grey. One spout, however, belonged to a vessel of beautiful red, polished earthenware, brick-red in cross-section.

All these broad, grooved spouts project directly from the upper edge of the vessel. On the other hand, one finds no examples at all in Shah Tepé, as for instance on Anatolian and Cyprian vessels, where the vertical, narrow and well-marked neck of a vessel is provided with a spout-like continuation, except possibly in cases where the neck consists only of a narrowing with splayed rim.

17. *Necks.*

The jars in layer III seldom have a real neck; as a rule they have a splayed rim round the mouth of the vessel-body. The late jars in B II s²⁰ and F III s² as well as the jars in C III s¹ constitute an exception to this rule. Not until we reach the boundary towards layer II b do we find vessels with a somewhat higher, fairly wide, vertical neck (e. g. in no. 308 A III s²). *Narrow cylindrical necks*, commonly with a splayed rim are then frequently found in layer II, both *b* and *a*, especially in the egg-shaped vessels and the younger ones with tubular spout. In the case of the one round vessel in B II s⁶ (no 557; Fig. 191) the neck looks almost like the *frustum of a cone* with the base upwards, and the wide necks of some vessels in C II s² (Fig. 213). and of the spouted jug in G II s² (Fig. 267) have a similar character. A *low wide neck* with horizontally splayed rim is often found in the small oval or globular jars with string-hole projections. The same is true of the globular spouted jugs in E II s⁵ and G II s⁹.

In a vessel in G II s⁴ we find an uncommonly *high neck*, as high as the body. (Fig. 271). The *cylindrical neck* without splayed rim in the canteens B I 23 and E II 20 is relatively shorter but still uncommonly *high*.

a) About ten comparatively *high necks* with plain rim, three of them intact, were found in the settlement and may be assumed to have belonged to canteens. (Pl. LXI, Fig. 486 a, b). One of these is 5.6 cm. in height and 3.6—4.1 cm. in diameter. The corresponding measurements for the others are 6.4 and 3.7—4.8 cm. respectively and 7.2 and 3.9—5.1 cm. respectively. To this group probably

belongs a somewhat *shorter cylindrical neck* (1. 4.8 cm). from shaft F, whose canteen seems to have had a presumably rectangular form, flattened from two sides. (Pl. LXI, Fig. 487). It is also conceivable that the faceted shoulders projecting almost at a right-angle from the base of the neck belonged to a vessel in the form of a human torso, such as we know from grave G II s⁷. The breadth »from shoulder to shoulder» is 16.2 cm. and the height of the neck 5 cm.

b) About ten necks have the form of a comparatively *low frustum of a cone* with slightly concave sides (Pl. LXI, Fig. 488), just as in the case of one of the vessels in B II s⁶. The largest measures 6.8 cm. in breadth and 4.1 cm. in height, and the smallest 5.3 × 2.1 cm. Other measurements are 5.4 × 4 cm., thus a relatively high neck. Such necks are found in F III, F III s³⁻⁷, C III and C II, and have as a rule belonged to rather large vessels. One can say that these necks constitute a development of the upward and outward tending rim. In H II s⁴ there are a couple of related necks belonging to smaller vessels, one of them, however, having an abruptly splayed rim.

c) A large group of necks have originated as a heightening of the outsplayed rim (cf. b)). Some of them remind one of *group h* and others of *group g*. They are in general rather *low* in relation to the *great width*; the neck-wall may be rectilinear, tending somewhat obliquely upwards and outwards; but frequently the line is somewhat curved. The vessels to which these necks belonged were large jars. As an instance one may mention such a neck with rectilinear walls. Its height is 5.4 cm., upper width 14.6 cm., inner, lower diameter 8.2 × 7.5 cm. Another more curved neck from C II measures 4.7 cm. in height and nearly 13 cm. in upper diameter. While the colour is in general blackish grey or light grey, two necks from A II99 and H II4 are reddish grey in colour. (Pl. LXI, Fig. 489). At least fifty such necks have been preserved. Of these, 2 derive with certainty from C III, 1 from E III, 5 from F III (two from F III s³⁻⁷), 3 from the transitional zone between E III and E II, 8 from A II, B II, C II, D II, of which 2 = A II99. They thus probably derive from the transitional period between III and II b.

Several of the vessels may have resembled the large jar in A III s², (Fig. 172), and are probably to be traced back to the small, characteristic, bellied jars in layer III.

To this group may also be reckoned fragmentary *necks* with parts of the wall of huge *storage jars* of thick grey or black earthenware. Such a jar of light grey earthenware was found in D I 14 but belongs without doubt to prehistoric time (Pl. LXI, Fig. 490). Its diameter of mouth is 30 cm. and height of neck 5.5 cm. The neck forms a curve, outwardly concave. The belly-diameter of the vessel certainly amounted to at least 50 cm. The thickness of the earthenware in this jar varies between 1.3 and 2.0 cm.

Another, similar jar of grey earthenware had a still greater circumference. As regards this and other fragmentary storage jars, however, it might perhaps be

more correct to transfer them to the group with splayed rim, for there can be no talk of a real neck — the vessel tapers towards the mouth and is there provided with a wide splayed edge, in this case almost 8 cm. in breadth, otherwise rather less. In E II have been found the fragments of walls of similar huge jars with a thickness varying between 1.3 and 1.7 cm. Another such fragment of rim, 5.5 cm. broad, was found in C II70, and a couple of others, rather higher, were dug up in C III.

d) Quite unique is a *high neck* of light grey earthenware with slightly splayed rim. On this rim are two small *vertically perforated lugs*. (Pl. LXI, Fig. 491). The neck derives from F III.

e) A group of *necks*, numbering at least 17, are comparatively *high*, cylindrical or slightly widened at the base, and provided at the top with a wide, horizontally spreading rim, a brim that is in some cases as much as 3.2 cm. in breadth. The height of the neck is sometimes as much as 8 cm. and the corresponding diameter of mouth 9.5 cm. A characteristic feature is the angle, almost a right-angle, that in some of these necks is formed by the upper surface of the brim and the inside of the neck. (Pl. LXI, Fig. 492). In some cases the brim is continued in a long curved handle.

f) There are, however, transitional specimens to another type of similar *necks*, the upper part of which spreads out like the *calyx of a flower* without marked transition from the inside of the neck. Instead of the sharp angle we find on the inside a graceful convex line. (Pl. LXII, Fig. 493 a. b). At least 16 such necks have been preserved. The diameter of the biggest one is 36.5 cm, the present height about 14.0 cm. The earthenware is thin and blackpolished. (Pl. LXII, Fig. 494). A number of these vessels were probably biconical. The diameter of the mouth may be as much as 10.3 cm. with a corresponding height of neck of 5.5 cm. Such necks are found in C II, G II and F II, a couple in F III s³⁻⁷. In F III s³⁻⁷ a transitional type between *f* and *e* has been found. The height of neck of this latter may attain 10.3 cm. with a diameter of mouth of about 8.6 cm. The vessels are related to the jugs with handles, that are mentioned in 6, e.

g) Certain large jars had a *low*, rather *wide*, *cylindrical neck*, that continues in splayed rims as in the case of the previously mentioned group *e*). The diameter of mouth of such a neck from F III is 17.8 cm., and the height 4.8 cm. Another large vase, that certainly had a diameter of 24 cm., has a neck 3.5 cm. in height and 10.9 cm. in width.

h) A little, *low*, *cylindrical neck* with projecting edge flat on top is noteworthy because the vessel obviously bore a handle fixed to the rim, that projects up a little over the neck. The vessel certainly consisted of a little globular bottle like the one in B II s⁸ (no. 559).

i) A couple of fragmentary *necks* of the type that was found in 3 vessels in the late grave C II s² have also been preserved, one of them being found in D II. The

neck is relatively *high* (5.4 and 6.3 cm.), *wide and slightly splayed*. One neck is decorated with burnished zig-zag lines. A related type of neck, though somewhat lower, belongs to a vessel from H II4. This was a storage jar of heavy, thick earthenware, blackish grey in cross-section, but burnt red in the inside. The diameter of mouth is 12.65 cm., height 3.7 cm.

k) Loose *necks* with burnished ornaments, rather *low* and with *splayed rim* and belonging to small carafes with rounded bottom have been found e. g. in C II.

l) Of particular interest is a *neck* with *convex sides*, about as wide at the mouth as at the base but surrounded in the middle with a *wide, sharp-edged collar*. The shape reminds one of the North European collar flasks from the younger stone age. Height 6.2 cm. Width of mouth 5.1 cm. Width of collar 6.0 cm. (Pl. LXII, Fig. 496).

18. *Rims.*

We have about 200 such rims of grey and black earthenware, representing about the same number of vessels. They are of various widths and thicknesses, depending on the size of the vessel. Their inclination towards the horizontal plane also varies from something over 90° when upright, to 180° when they lie horizontal with the upper surface, and still more, when they incline outwards and downwards. A number of rims are provided with burnished ornamentation, commonly consisting of intersecting diagonal lines forming rhombs, but also of zig-zag lines or parallel diagonal strokes. Such ornamented rims have been found for example in F III, C III and C II. (Figs. 497, 498).

A number of the splayed rims have belonged to large storage jars, with which we are acquainted in less damaged condition in E III, F III and G III. Some rims are thin and broad (e. g. 0.8 × 4.1 cm.); others are thicker and narrower (e. g. 2.1 × 3.5 cm. (Pl. LXIII, Fig. 499). In this connection the thickness has been measured nearest to the vessel-wall. Three of the fragments with thick and narrow rim have a conical perforation a couple of centimetres below the rim. The hole is widest on the outside. One such rim is ornamented on the upper surface with a couple of longitudinal grooves. Several were found in the transitional zone E II—III and in F III. About 10 large sherds from stoutly built jars have a thickened rim that projects only slightly from the outer wall, has a flat horizontal upper surface and is demarcated from the wall by a groove. In cross-section it generally appears square or rectangular. (Pl. LXIII, Fig. 500). The rim may be for example 1.4 cm. in thickness and the earthenware of the wall 0.7 cm., thus precisely half as thick. Another fragment has an upper edge of 1.4 cm. in breadth, 1.8 cm. in height with a wall-thickness of 0.7 cm. A fragment of upper edge with a thickened, rounded rim from F III has a portion of wall on which one sees thick bumps or swellings on the inside, corresponding to similar bumps on the outside. (Pl. LXIII, Fig. 501). These bumps were probably not deliberately made. The

carelessly formed vessel shows, however, striation from a hard brush or similar instrument, that in other circumstances one would have attributed to turning.

In connection with these fragmentary rims may be mentioned about 40 others, the upper edge of which is broad and horizontal but not in any way separated from the wall, into which it gradually merges. These fragments have as a rule belonged to large storage jars, grey in colour. They have been found in F III, A II, B II (B II65), D II20. In colour they are black, grey or brown. The upper breadth of these sherds may amount to 2 cm. with a thickness of 0.8 in the earthenware of the wall. (Pl. LXIII, Fig. 502).

Among the last-mentioned fragments there are a dozen that under the rim show commonly two adjacent holes on the same level. Except in a couple of cases the holes have been made before the burning. They are in this case cylindrical, otherwise conical. (Pl. LXIII, Fig. 503).

Finally, it should be mentioned that we have a very large number of splayed rims of red and black-painted storage jars. This will be discussed in connection with the painted pottery.

Large and thin rims (e. g. 4.4×0.7 cm.) have belonged to medium-sized jars, with earthenware that may vary in thickness from as much as 1.2 cm. to as little as 0.4 cm. A number of fragments were found in C III and F III as well as in A II, B II, D II and G II, a couple also in H II4, the latter being straighter.

Many thin and narrow rims with flat and almost horizontal upper edge have probably most often belonged to conical vessels. We find them already in C III, E III and F III; but they are commonest in A II(99), B II, C II(7), D II, F II and G II. Some have had open spouts, others have string-holes through the upper edge or under the same.

A small number of broad and thin splayed edge-fragments, generally burnished on the under or upper side or on both, probably formed an angle of approximately 135° with the horizontal plane. Immediately below, the vessel-wall forms a strongly marked curve. It is possible that we have here to do with the bowls of fruit-stands.

Numerous rim-sherds of black or less often grey or brown earthen-ware have a narrow edge, sometimes faceted on the inside, sometimes thin and rounded, but characterized by a grooving on the outside just under the rim. (Pl. LXIII, Fig. 504). These vessels generally show a marked rounding below the wide mouth. Unfortunately it is not possible to say what form the bottom part of the vessel had. Some of these vessels presumably had spouts.

The fragments derive from layer III (C and F). The vessels vary greatly in size, from a diameter of mouth of 5 cm. in the smallest.

Fragments of vessels of the same rounded form but with broad, splayed rim are also among the finds.

A number of fragments of rim are attached to straight, vertical walls with a very narrow, horizontally faceted edge and immediately below this a groove. The earthenware is thin and reminds one most of that which one finds in the high bowls or beakers.

Some of the rim-sherds derive from just such deep bowls, others from cylindrical vessels. Occasionally one finds a fragment of rim with a lug.

19. *Bottoms.*

Over 270 bottoms of different clay vessels were found in the settlement. In the majority of cases it is of course impossible to decide whether any of the lugs, spouts or rim fragments discussed above belong to these. The bottoms are for the most part flat, generally with out-leaning vessel-walls, though in some cases the latter are vertical. Several of the last-mentioned sort have belonged to the ordinary cylindrical vessels from layer II b. 30 bottoms derive from F III, a dozen of them coming from F III s³⁻⁷. A bottom from G II belonged to a deep bowl. We have another of the same kind also from C II. Of 3 bottoms from E III one belonged to a biconical vessel and one to a narrow cylindrical vessel. Further, we have 3 bottoms from D II (D II 20), one with burnished ornamentation on the outside, 2 from C III, 5 from C II (of which one came from C II 24 and one from C II 7), 2 from B II and 7 from A II (1 from A II 1, +3.80 m., 1 from A II 42, 1 from A II 99, 1 from A II 19). The origin of the others is not given.

There are also large bottoms whose outer edge measures up to 2.7 cm. in thickness. These were found in layer II; they belong to large jars. Among the smallest bottoms may be reckoned those belonging to biconical vessels, though bottoms from deep bowls are still smaller. The bottoms are not infrequently thickened on the inside by an extra, rough coating of clay, while on the outside they are smooth. One bottom has a thickened knob in the middle, appearing both on the outside and the inside.

The outside is sometimes furnished with *burnished ornamentation*, generally with a pattern of rhombs. There are also *scratchings* in the form of crosses, or as parallel strokes, square patterns, arcs, round intersecting loops or eyes. Pl. LXIV Fig. 505 a—e).

And finally, at least 6 bottoms show distinct *impressions of textiles*. In three or four cases the vessel has stood on a piece of reed or straw-mat while yet in the making, and thus received an impression on the bottom. (Pl. LXIV, Fig. 506 a, b). Reedmats were perhaps a sort of fore-runner to the potter's wheel. In one case the impression arose through the clay bottom being placed in a wet condition on a piece of matting, probably woven with coarse tablet weaving technique.¹

¹ Kindly communicated by Dr AGNES GEIJER.

(Pl. LXIV, Fig. 507 a, b). Another bottom seems to have been moved from one support to another, possibly also a »tablet weaving mat», so that a more irregular impression has been left. (Pl. LXV, Fig. 508 a, b).

The rather thin bottom of a large clay vessel is deserving of mention on account of a conical hole of the same sort as is found near the rim in a number of vessels. In this case the hole has been bored near the edge of the bottom.

We have also a half-bottom of a grey-black vessel of hard-burnt, yellowish-grey clay, possibly dating from prehistoric times. The bottom is surrounded by a raised ring with two grooves on the inside and on the outside. It seems not to have been turned on a wheel. A ring-shaped elevation on the foot is otherwise not known; but on the pot with spout in G II s² there is a specially marked bottom some millimeters in height.

20. *Bodies.*

Fragments of bodies were brought away in large numbers where it seemed possible with the help of ornamentation or other special marking to piece them together, or where the fragments seemed otherwise of interest. Thus, besides the previously discussed sherds with knobs, engraved ornamentation, reliefs etc., we have numerous sherds with burnished ornamentation in various patterns as well as parts of thin-walled deep bowls, cylindrical vessels, footed bowls etc.

21. *Coarse ware.*

The coarse ware is for the most part brick-red in colour, but also in some cases dirty brown and grey. It generally has a strong admixture of gravel, is porous and gritty and easily falls to pieces — although to judge from the red colour it has been fairly well burnt. This ware differs considerably, both from the painted and the black earthenware.

This pottery may be divided into 3 groups: two which begin to appear already in layer III and comprise footed cups and kettles, and a younger group consisting of cooking utensils provided with handles and in the shape of an oval jar. In addition, there is also a »hemispherical» bowl found in grave G III s² (no. 1427), mentioned in the foregoing.

a) *Footed cups.*

Two of these were found in grave F III s³. The one is a fragmentary stem with concave splaying at both ends. At one end is a concave, rather smooth surface, probably a part of the cup. The other end has splayed sides and inside a vertical projection filling a hollow space. (Fig. 509). Length 15 cm. The second stem is not so well preserved. Length 13.4 cm. The ware is very gritty and light red.

Other pieces were found in the settlement. There are two chalices, no. 321 D II 7 (in Stockholm) and no. 842 E II (in Teheran). Both have a conical cup. The former has a slightly splayed foot with flat base and a very short stem. (Fig. 510).

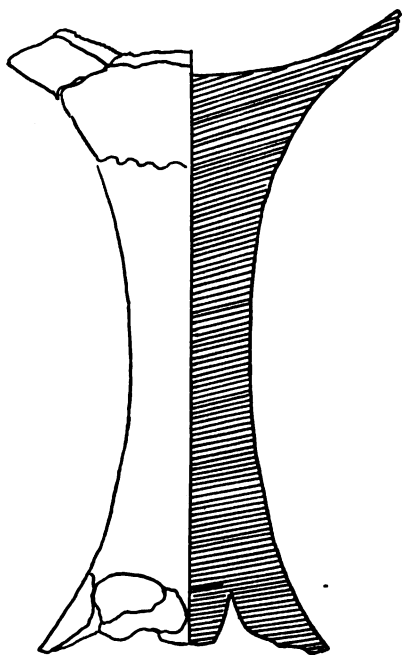


Fig. 509

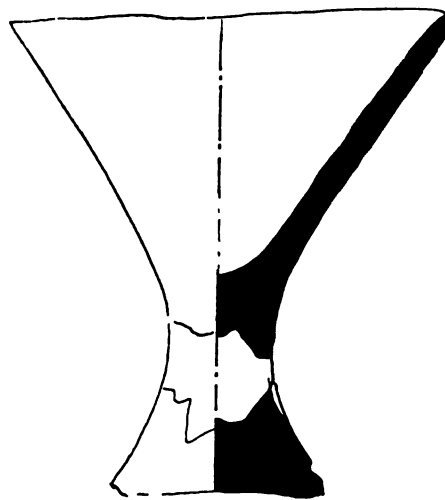


Fig. 510

The foot of the latter is missing, but it has a high stem. (Pl. LXV, Fig. 510 a). There are at least 10 more such stems, more or less well preserved. Several are very thick. (Fig. 511 from F III). One of them is 5.9 cm. in cross-section and still measures, although only a fragment, over 15 cm. in length. The above-mentioned vertical projection, that is seen to be stuck in at the base, is found in several of these stems. Some still have a small part of the bowl; and one stem from C III has a preserved, conical, inwardly concave foot with a diameter of 8.9 cm. While three specimens were found in C III, one seems to derive from E II.

Further, there are two conical feet, massive and flat on the bottom. They have supported high bowls. One of them was found in the transitional zone between E II and E III.

b) *Kettles.*

As has already been mentioned, at least 17 short, tongue-shaped spouts, open at the top, have been found, obviously belonging to kettles of coarse ware. It has also been pointed out that according to the notes and plans damaged kettles have been found in C III, F III, G III and D III, but also a couple of later ones in H II a. Best preserved is a large hemispherical kettle or storage bowl with a round bottom and convex walls. The rim is smooth. It is impossible now to decide whether it originally had a spout or not (Pl. LXV, Fig. 512).

Three rim fragments of coarse red ware, somewhat blackened by soot on the lower part of the outside, were found in F III. A short spout from F III probably belongs to the same vessel. The kettle was of considerable width. The rim slants

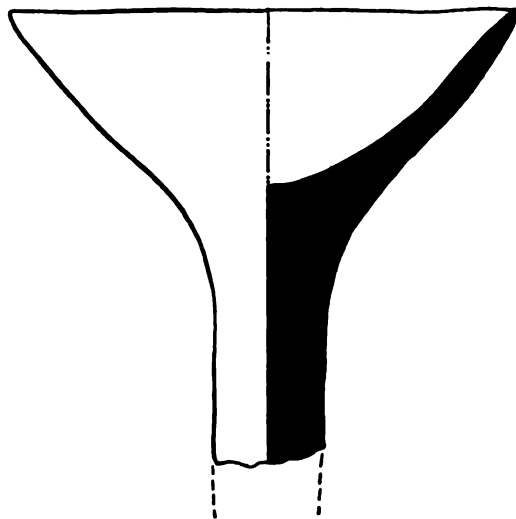


Fig. 510 a



Fig. 511

inwards and is thickened on the inside. One of the spouts in E II with surrounding portion of vessel-wall attached has belonged to a similar kettle. About 10 rim fragments of coarse ware, red at least on the inside, belonged to a corresponding number of kettles. One of these fragments was found in A II. About 30 other fragments of rims, sometimes quite large, are greyish brown or blackish brown in colour. Four of these fragments belonged to a large kettle from A II with broad, rather flat, inwardly slanting rim. Four fragments, one being a portion of rim (probably from two different kettles), derive from F III s³⁻⁷, and a further third part of a kettle from F III 21, as well as 9 large rim fragments from F III, three of which are marked F III 21. This kettle has had a diameter of about 35 cm. and a height of nearly 25 cm. The thickness of the ware is about 0.7—0.8 cm.; 1.2 cm. at the rim. A couple of fragments of kettle-rims from F III, both from one and the same vessel, consist of rather less coarse ware, with not so much admixture of gravel. These two are smooth both on the inside and the outside.

Finally, we have a couple of fragments of rim whose upper edge projects over the wall of the vessel. (Pl. LXV. Fig. 513) and almost forms a right-angle with the same. One of the fragments is brick-red (from E II—III) and the other greyish brown.

Further, there are numerous fragments of wall. More than 15 of these certainly belong to a previously mentioned kettle from F III, the ware of which is red inside and blackened outside. At least 40 bits of wall belonging to the blackish brown kettle F III 21 have been preserved. It is possible that a further 30 fragments, marked F XXI, are also parts of the same kettle.

A piece of a large, well-burnt, reddish kettle of coarse ware shows an interesting detail, viz. a horizontal lug or projection, 7.5 cm. long, the upper side of which is

almost horizontal, the other side sloping downward. It has been found in F III. (Fig. 514).

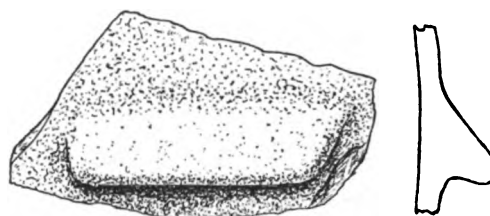


Fig. 514

Largely intact is a kettle from H II⁹ with a diameter of approximately 40 cm. but with the rim knocked off. The ware is better burnt and thinner (0.5—0.6 cm.) than in the older kettles. There are some

fragments of a kettle H II₄. A quantity of related, for the most part burnt, ware derives from A II, A II₃, A II₂₉, C II₂₄, D II₂₀, E II.

c) *Small cooking-pots with a handle* are characteristic for the stratum II a¹ and have been spoken of in the chapters on Prehistoric pottery, «*Studies in pottery*», and «*Some pottery types from the settlement*.»

22. Mottled ware.

In layer F III were found about 20 fragments of the coarse, red, as it were flamy earthenware with black patches and admixture of gravel, that has been given the name «mottled ware». (Pl. LXVI, Fig. 515 a, b). On the inside it is black and sooty. The thickness of the ware varies between 0.4 and 0.8 cm. The same kind of ware, but coarser, has been found in the so-called stone age village near *Persepolis*, and above all in the North Kurgan in *Anau* and in *Greece*.

23. Red polished ware.

As a variety of black or grey polished ware you may regard the red or red-brown polished ware that has got its different colour through a more complete burning and perhaps a special wash. This ware is relatively rare. There is only one specimen of the red polished ware from the tombs, viz. a hemispherical, short-spouted bowl with flat base and plain rim (no. 841 G II s¹ a). (Fig. 269 and (Pl. LXVI, Fig. 516).

From the settlement we have four whole specimens and about 10 sherds of the same pottery. The clay is reddish brown in colour and seems to be finely silted. The surface has probably been shaved, then slightly smoothed and finally polished linearly. The walls are pretty thick, and therefore the vessels are heavy. Specially heavy is the jug F II no. 1001, and chiefly the bottom is thick.

The four vessels in red polished ware are all of different shape:

1) a little *hemispherical bowl* with flat base and plain rim. About 2 cm. below the rim one hole is pierced, and this is widest on the inside (prob. F III, Stockholm). (Pl. LXVI, Fig. 517). Restored;

2) an *oval jar* with flat base and symmetrically curved body, very short, concave neck with wide splayed rim (Teheran, no. 714 E II 12, +6.30 m.). Pl. LXVI, Fig. 518);

3) a *globular, handled jug* with flat base and gentle transition from neck to body. The neck is fragmentary. The handle is running from the upper part of the shoulder to the neck. Similar to the cooking-pots of coarse ware. (Teheran, no. 181 C I, +6.10 m.). (Pl. LXVI, Fig. 519);

4) a *bottle-shaped, globular, handled jug* with flat base and a high, slightly tapering neck with plain rim. The handle runs from the middle of the shoulder to the middle of the neck. (Stockholm, no. 1001 F II). (Pl. LXVI, Fig. 520).

Besides those whole vessels there are about 10 fragments of different red polished vessels:

1) part of a bowl, about 7.3 cm. high and 16.2 cm. wide, with flat, slightly concave base (about 5 cm. wide) and a thickened, plain rim. Red in- and outside but grey in cross-section. Probably of a type similar to no. 841, G II s¹ a;

2) broad spout of a wide bowl similar to no. 1761 H II s¹. (Fig. 273). Brick-red in cross-section. (Cf. Prehistoric pottery, C 16, 11, spouts);

3—4) two short tubular spouts with a beak in the shape of a cutaway, open, horizontal channel (cf. Prehistoric pottery C 16, 5, Fig. 475);

5) rim-herd with a narrow, rounded edge characterized by a grooving on the outside just under the rim (cf. Prehistoric pottery C 18);

6—7) two splayed rims, one thin and slightly burnished on the upper side, the other thick and rounded;

8) thickened plain rim of a bowl with thin wall;

9) plain, rounded rim of a big vessel. Perhaps of younger origin.

10) fragmentary bowl of fruitstand or chalice (Pl. LXVI, Fig. 520 b).

Except no 1, all these fragments are well burnt and of brick-red colour. It is not quite sure that the hemispherical bowl no. 1 has been found in layer F III; it may be younger, but shape and size correspond to the small black or grey bowls in layer III. The red polished ware seems generally to be of a relatively late date.

It is strange to observe that some of the mussulman vessels made on the potter's wheel and found in level I, show the same red colour, polish and other treatment as the prehistoric vessels.

Decoration of the black and grey pottery from Stratum II

In the transitional layer between strata III and II B one finds the earliest specimens of the new mode of decoration with burnished ornaments (Fig. 223, No. 1704). The surface of the vessel is generally dark grey or grey, and has been smoothed. The burnishing has been performed on this surface, and in this connection it is clear that some form of charcoal has been employed. The ornamentation is found as a rule in horizontal zones — quite the opposite of the mode of procedure in the case of the painted pottery from the same place, which was characterized by a vertical grouping. The ornamental *motifs* are few and

simple. Between the encircling lines delimiting the zones one generally finds simple strokes, oblique and at the same time parallel and within the different zones alternating in two directions, cross-hatched, zig-zag and in the form of angles.

In a few cases the burnished ornamentation is arranged vertically without encircling lines. This applies to the previously mentioned little biconical vessel in C III s¹ (no. 670) as well as to a number of bottles and canteens from II a, especially the upper part of this layer. (No. 148 B II s¹, no. 988 G II s³, no. 1000 F II s³, no. 1764 H II 3, no. 192 B II 3, no. 834 G II s², no. 136 B I 23, no. 322 D I 18.)

On a number of sherds and bottoms from the settlement one sees burnished ornamentation in the form of series of round loops (Pl. LXVII, Fig. 521). The bottoms are sometimes provided with a burnished network of squares. Mention may also be made in this connection of incisions on some bottoms in the form of crosses, a network of squares, a row of more or less parallel strokes, going right across the surface, or finally, a wavy line (Pl. LXIV, Fig. 505).

A vertical incised line in zig-zag is to be seen on a little pyramid-shaped vessel (no. 46 A II) and incised oblique lines within a zone of horizontally incised, encircling lines distinguishes the pot no. 835 G II s² (Fig. 267).

Finally, attention may be drawn to the relief-bands occurring on a couple of canteens, as well as around the necks of a few biconical vessels (e. g. no. 716 A II s¹²).

COMPARATIVE STUDIES OF POTTERY

Stratum III.

A. Unpainted pottery.

Black-polished, low, round-bellied or slightly carinated jars were found also in Tureng Tepé. Wulsin reproduces a couple of these and states.¹ »We found gray pots decorated with incised lines and with raised bosses in rows (Pl. XII, Figs. 3, 4 and 5).» »Incised ribbed and bossed gray ware was relatively rare, but sherds of these types became more common as we dug deeper; the best pieces came from out two burials at 96.7 to 98. It is noteworthy that no pots of the burnished gray ware so common at 102 to 105.20 were found in these burials.» It is thus fairly clear that this type of clay vessel belongs to the oldest grey ware that has been found in Tureng Tepé.

Such jars, ornamented with knobs and ridges, were very rare in Tepé Hissar, where they appeared in layer II B.² A large storage-jar of this type measures about 40 cm. in height and 45 cm. in diameter. The type seems rather to have been introduced from without, for there is scarcely any evidence that would point to its being indigenous in Hissar I or II A. A very small jar that has been

¹ WULSIN, op. cit., p. 9.

² E. SCHMIDT, Excavations at Tepé Hissar, Pl. XXVI, H 1822, 4783, p. 116.

ascribed to Hissar II A (H. 5124) »with one perforation near the neck and corrugations on the upper body» belongs possibly, indeed, probably, to II B.¹ From Jarym Tepé on the Turkoman steppe we have a similar jar of quite considerable size (Pl. LXVII, Fig. 523),² ornamented with knobs and incisions. The greater part of the sherds from Shah Tepé that have been ornamented in this way belonged to stratum III. Similar sherds have been collected from about a dozen tepés on the Turkoman steppe, bearing witness to an early settlement there. As has already been mentioned, Shah Tepé's black-polished, bellied jars correspond completely to specimens of the painted pottery, and we have certain grounds for ascribing the latter to the Jemdet Nasr-period. Parallel with the jars referred to here are the more or less hemispherical cups, which may be decorated in the same way with knobs, incisions etc. A jar and a cup in A III 6 a (—0.65 m.) are both ornamented with knobs and were found at a depth that indicates that they belonged to the oldest inhabitants of the place. A knob-ornamentation that strongly reminds one of that which is to be observed on the early black ware from Shah Tepé is known from Orchomenos in Middle Greece. Among the black-polished pottery that is there referred to neolithic or sub-neolithic time one finds a sort of deep, semi-spherical bowls. These are often ornamented with round (more rarely oblong) knobs arranged in horizontal or vertical rows. Combinations of knobs, grooves and ribs also occur.³ KUNZE does not venture to give any absolute dating of these finds. He seems, however, to reckon with the period about 3000 B. C.⁴ The knob ornamentation gives the impression of having arisen in imitation of the rivet-heads in a copper vessel; and the clay vessels themselves are even technically on a level that is not excelled by later prehistoric ware in Shah Tepé. Where the black or grey pottery of the Near East was first developed is still an open question. It appears, as is known, in Uruk XIII (XIV) and survives up to Uruk IV, after and in part contemporaneously with the painted el-Obeid ware and before the painted Jemdet Nasr pottery.⁵ An imitation of metal vessels has been possible ever since the Jemdet-Nasr period, for from this time we have both silver and copper vessels.⁶

In Tepé Hissar was found a little copper bowl, that may possibly be ascribed

¹ *IBID.*, Pl. XXXVI and pp. 178—179.

² M. BYLIN-ALTHIN, *Keramische Funde von den Tépés der Türkmenensteppe* (Svenska Orientaliska sällskapet, Årsbok 1937), fig. 1.

³ E. KUNZE, *Orchomenos, II, Die neolithische Keramik* (1931), pp. 16, 17, Pl. VI, VII, 2.

⁴ *Ibid.*, p. 49. (»Wir müssten danach mit dem jüngeren Neolithicum von Orchomenos in das 3. Jahrtausend hinabgehen.» »Doch darf man wohl annehmen, daß wenigstens ihre (der Keramik) älteren Stufen ziemlich hoch ins 4. Jahrtausend hinaufreichen»)

⁵ A. v. HALLER, in *Vierter vorläufiger Bericht über die . . . in Uruk unternommenen Ausgrabungen*, 1932, pp. 31 et seq. CHRISTIAN describes Uruk pottery as follows: »Die graue Ware ist in Uruk aus einem rötlich-grauen, mittelkörnigen, weniger gut gebrannten Ton gefertigt, der sich weich anfühlt. Sie ist auf der Scheibe gedreht und besitzt einen feinen, grauen, manchmal fast schwarzen, geglätteten, selten polierten Überzug.» (Op. cit., I, p. 114).

⁶ V. CHRISTIAN, Op. cit., Pl. 132 and 133 (vessels from Uruk III and Lagash.)

to layer II B, and in the Shah Tepé grave E III s⁷ a quantity of sheet-copper belonging to a vessel that derives from the same period as our black-polished jars and bowls.

We should not forget that polished black or grey pottery has been found in the old neolithic layers of Sakceğözü and Soguk-tepé near Mersina (KURT BITTEL, »Archäologische Funde aus der Türkei 1934—1938« in Jahrbuch des deutschen archäologischen Instituts, Bd 54, 1939).

In Tepé Hissar the grey pottery appears earliest in layer II A, and then in the form of bowls on a high foot, jars on feet and low cups, presenting an indeterminate likeness in form to certain cups from Shah Tepé. One jar (H. 2992) with yellow-brown raw surface and light-brown earthenware¹ may possibly be classified together with those from Shah Tepé, but it is rather isolated. Both this and the jars ornamented with knobs and incisions from II B give the impression of being more foreign types introduced from the northern steppe, where they belong to an older stage (Hissar I B—C), dated in Shah Tepé by amongst other things a contemporaneously occurring sherd ornamented with the figure of an animal and painted black on yellow-white, mentioned on page 000.

It seems probable, as E. SCHMIDT assumes, that the black and grey polished pottery in Tepé Hissar was introduced from the region to the north of the Elbruz mountains. This pottery seems to have existed there at the same time as a painted pottery that shows connections with Jemdet Nasr and Susa II. The polished black pottery on the Turkoman steppe to the north of Elbruz is thus likely to have had direct contact with the unpainted pottery of the Uruk epoch on the one hand, and on the other to have carried the traditions of the latter over the mountains to Tepé Hissar, where it made its appearance during a period that is probably to be regarded as corresponding chronologically to that of the royal graves in Ur.

This does not, however, tell us anything about the native region of the unpainted black or grey-polished pottery. It is possible on the Turkoman steppe to find tepés that show similar pottery of older date than that which has been found in Shah Tepé and Tureng Tepé, thus from the Uruk period. But it may possibly have been brought in from the west along the southern coast of the Caspian Sea. We know as yet nothing of any influence from the east.

It has already been pointed out that the so-called *fruit-stands* with high feet in Shah Tepé appear in the upper part of stratum III at the border towards II b. In D III s² the foot consists of a straight cylinder, in E III s⁶ and F III, 17 but also in stratum G II of a column, somewhat thickened towards the top and sometimes widening out to form a kind of round capital. Above this point it tapers again, being finally crowned by the wide bowl.

A whole fruit-stand or lamp of the kind mentioned above has been found in

¹ E. SCHMIDT, Excavations. Pl. XXIII, H. 2992, p. 114.

the settlement of Tureng Tepé, together with many fragments of others.¹ »Other shapes found apart from graves include a flat bowl that is almost a plate, and large deep bowls with a lip for pouring, known to us only through incomplete specimens.» Evidently these correspond to the early fruit-stands in Shah Tepé.

In Tepé Hissar there are painted bowls on half-high cylindrical foot already in Hissar I C,² but not until we reach II A do we find the bowls on really high feet, fruit-stands of grey ware. These, however, show stems of pure or almost pure cylindrical form without the thickening towards the top. Is it not conceivable that the reason for this is that the columns with thickened tops and also the burnished decoration in Shah Tepé originated (and were used on the Turkoman steppe) already during the period preceding Hissar II A, and that only the method of decoration spread to the plateau? The column form with a similar thickening has been observed as early as in Ališars Copper age. »Just below 'Period I' we entered a transition level where fragments of standards (Fig. 23) of so-called 'fruit-stands' similar to those of the Danubian Neolithic culture appeared. Below this we reached a Neolithic level.»³ According to this, one here comes down into a period corresponding to, at the latest, Troy I and Thermi I—III. To an all too early dating it may be objected that fruit-stands with such an upwardly thickened stem show a decoration of burnished, horizontal zones, that do not belong to the oldest black-polished pottery in Shah Tepé.

The pure cylindrical stems of fruit-stands with and without ornament are fairly numerous in Shah Tepé III and II b. Unfortunately they are fragmentary and cannot be fitted to corresponding bowls. It may, however, be deemed probable that fluted or ringed bowls and stems belong together (Fig. 328 and 329). In Tepé Hissar II A were found fruit-bowls on high cylindrical hollow stem with a somewhat conical bowl, whose shoulder-part shows slightly concave sides.⁴ In addition they have a rather flat foot. In II B one sees similar bowls on lower cylindrical stems and with a more conical foot.⁵ Several specimens of this sort of fruit-stand are known from Shah Tepé (Fig. 348). »The gray ware», says E. SCHMIDT, »is very similar in both Hissar II A and II B. The mat or polished, wheel-made bowls . . . are often identical, in form, with the vessels of the painted pottery age. Tall stemmed bowls or goblets . . . in addition to elaborations such as parallel ridges and stipples, suggesting prototypes of metal, are newly introduced features.» (P. 304).

One notes particularly the expression »wheel-made»; and for SCHMIDT it is a »puzzling fact» that »while wheel-marks are usually well pronounced on Hissar

¹ R. WULSIN, *Op. cit.*, p. 9, Pl. XIII, 3.

² E. SCHMIDT, *Excavations at Tepé Hissar*, Pl. VIII, H. 4593, IX, H. 3421.

³ H. V. D. OSTEN, *Discoveries in Anatolia 1930—31*. (Chicago Oriental Institute Communications, No. 14, p. 25, Chicago 1933).

⁴ E. SCHMIDT, *Excavations etc.*, P. XXIII, H 2998, fig. 67.

⁵ *IBIDEM*, Pl. XXV, H 5119.

II ware, by far the greater part of the Hissar III pottery appears to be made by hand.» (P. 307). »Wheel-marks are suggested by certain striations». (P. 46).

I do not know whether SCHMIDT has any other criterion for wheel-made ware than »certain striations». Such marks are found just near the top of the above-mentioned fruit-stand bowls both in Tepé Hissar and in Shah Tepé (Pl. XLIX, Figs. 348, 349. Also Cf. Pl. LXXXIX a). But I strongly doubt whether these marks were caused by actual turning on a potter's wheel. The vessel may have stood on a base — a bit of matting, a piece of wood or broken earthenware — that was slowly turned during the making, and especially during the polishing. These striations give me the impression or having been caused by treatment with a stiff brush. There were certainly enough pigs for the making of brushes.

In dealing with the prehistoric earthenware from Yang-Shao and other places in China¹ I myself made a similar assumption: »It is unquestionable that the vessels were prepared, as a rule, with the help of the potter's wheel. This is indicated by the fine parallel flutings on both the inside and the outside, and also by the fineness, thinness and evenness of the ware.» One finds the latter qualities also in such ware from Shah Tepé as is without doubt hand-made. And as regards the flutings and striations of the Yang-Shao ware I am now inclined to share the opinion that was later expressed by the Chinese writer on the subject, G. D. WU.² »I have noticed that these parallel striæ or regular lines always appear on the rim of a vessel but never on the base, or even on the lower part. The fact remains that only the rim, or the top part of the vessel, was made with the aid of some mechanism. In my opinion, this mechanism is the turntable, not the wheel.» And elsewhere (p. 52) he says: »I venture to think that these two things (flutings, fineness etc.) are not sufficient to prove that any pot is wheel-made.»

So-called fruit stands are, as is known, distributed far to the west of Iran. We find them in Khafaje³ with bowls whose foot is conical, while the upper more or less cylindrical part has concave sides and slightly conical bottom. The foot is sometimes ringed, and the vessel should often rather be referred to as a 'chalice'. More similar to the Iranian fruit-stands are those that have been taken from the graves at Carchemish-Jerablus near the Euphrates.⁴ Fruit-stands with cylindrical stem and semi-spherical bowl are known from Til Barsip (younger Akkad period).⁵ Beautiful fruit-stands have also been found in Asia Minor, e. g. in layer III in Alaca Hüyük⁶ (some with cylindrical stem and rather low foot

¹ T. J. ARNE, *Painted Stone Age Pottery from the Province of Honan, China*, 1925, p. 11.

² G. D. WU, *Prehistoric Pottery in China*, London 1938, pp. 47 and 132 et seq.

³ V. CHRISTIAN, *Op. cit.*, Pl. 176, 3, 182, 3.

⁴ *IBIDEM*, Pl. 318, 6—8.

⁵ *IBIDEM*, Pl. 380, 9.

⁶ BITTEL & SCHNEIDER, *Archäologische Funde aus der Türkei*. (Jahrb. d. deutschen Arch. Instituts, Bd. 56, 1941; REMZI OGUZ ARIK, *Les premiers résultats des fouilles d'Alaca Hüyük*, Fig. 21 (Belleten 1, 1, 1937).

and some with thickened stem just above the middle and high conical foot), and in the eneolithic layer at Ališar¹ (stem thickened in the middle, conical bowl with angular tapering sides). These Central Anatolian fruit-stands remind one, not only in their form but also by their black-polished, sometimes brown exterior, of the pottery from Shah Tepé; and I consider it probable that a road of communication during the copper age (eneolithicum) went from the Turkoman steppe south of the Caspian Sea, past the Urmia region into North Mesopotamia, over the Euphrates, and on the one hand towards the northern Syrian coast and on the other into Anatolia. The fruit-stands on a high column appear also in Cyprus in the form of red polished ware.² DIKAIOS dates a couple of graves (nos. 36 and 45) with similar vases to Early Cypriot II or the beginning of E. C. III, i. e. about 2300 B. C.

It is known that similar fruit-stands and chalices, some with high and some with low stem also occur in Crete (Knossos), and that related forms are found as far west as in south-eastern Spain (El Argar and other places).³ But they also reach the Balkan Peninsula. Near Lianokladhi in the Spercheus valley in Thessaly (level III) were found quantities of so-called Minyan ware. »It is all wheel-made, of fine grey clay, and the better specimens are polished. The shapes are: a) wide, deep goblets with a high, hollow foot ornamented with raised horizontal rings. This is the typical and commonest shape.»⁴ The similarity between this Minyan ware and fruit-stands from Shah Tepé is striking, both as regards form and decoration and as regards the often rather fat, grey or black polish. The Minyan ware is generally referred to the period Middle Helladic I, the beginning of the second millenium. The same sort of pottery is found in layer III in Orchomenos,⁵ from whose oldest layer (I) we have an already mentioned »hand-made and polished black ware, very well made, but with no decoration except for groups of smooth round knobs projecting from the surface like studs or rivet heads.» The last-named pottery is regarded by WACE as neolithic, and is placed on the same footing as ware from Chaeronea and Dhraakmani.

The so-called Minyan grey ware is found also farther north in Macedonia, where it is perhaps earlier than in Thessaly. Mention may here be made of a stemmed goblet from Molyvopyrgo of the same kind as that from Lianokladhi,⁶ and another

¹ BITTEL, *Präh. Forschung in Kleinasien*, Pl. V, 2, p. 65. »Fuß-Schalen, mehrere Typen a) solche mit hohem glattem und in der Mitte leicht geschwellenem Fuß, b) mit geschweiftem und horizontal gerilltem Fuß; c) solche mit starkem, fast glockenförmigem Fuß. Die gerippten Fußvasen sind immer tief schwarz und stark poliert.»

² P. DIKAIOS, *The Excavations at Vounous-Bellapais in Cyprus 1931—2*, Pl. LIII, 7, Pl. XVc (*Archaeologia* 88). »The stem is very tall and solid and has a spreading base. The cup is hemispherical and occasionally has an open spout and is decorated with a snake in relief» (p. 108).

³ M. HOERNES, *Urgeschichte der bildenden Kunst*, 1915, figs. on pp. 250, 251, 255.

⁴ WACE and THOMPSON, *Prehistoric Thessaly*, p. 186, fig. 135.

⁵ IBIDEM, p. 194: H. HANSEN, *Early Civilisation in Thessaly*, p. 100, fig. 44.4 in the Museum at Chaeronea.

⁶ HEURTLEY, *Prehistoric Macedonia*, 1939, p. 210, no. 398.

from Vardina in the Axios valley of fine black polished ware with low conical, angular-bellied bowl, cylindrical stem and conical foot,¹ very similar to Iranian specimens.

Of a fruit-stand from Hissar II B. SCHMIDT says: »An interesting stem ornament, consisting of three pairs of elevated rings, is shown on Bowl H 5070» (p. 116, Pl. XXV). The bowl is hemispherical.

Similar stems with the rings arranged in threes are known from Shah Tepé (Fig. 317).

It is interesting to compare with these, fruit-stands (tou) and also other pottery belonging to the so-called Black pottery culture of Lung-shan in China. The latter finding-place is situated about 25 miles to the east of Chi-nan, the capital of the province of Shantung. The decorated red pottery was succeeded in China, presumably about 2000 B. C., by the black-polished, wheel-made Lung-shan pottery. Also on *tou* of this ware one sometimes sees the raised rings.²

To the double bowl crowning a fruitstand in grave D III s² corresponds another without stem from Hama in Syria, found during the danish explorations and belonging to layer K from the first half of the 3rd millenary.³

Stratum III—II b.

Biconical pots with trough-shaped, deep, open spout seem to be rare in the more or less immediate vicinity of Shah Tepé. None such are mentioned from Tureng Tepé and only one from Tepé Hissar III B,⁴ referred to as a pitcher. A cylindrical pitcher with rather concave sides has been found in the same place and layer (H. 5004). It is lower than those which were discovered in Shah Tepé C II s⁶ and s¹².

If one turns farther to the south-west one finds the biconical pitcher with trough-shaped spout in Tepé Sialk, where it belongs to period IV and lay in the same layer as the proto-elamitic writing tablets (*les tablettes proto-élemites*).⁵ One is struck by the fact that the spouts in Tepé Sialk are generally directed more upwards, so that their upper edge does not lie on a level with the rim but forms an obtuse angle with the same. According to GHIRSHMAN, the originally very long spout seems gradually to diminish more and more. The earlier type with long spout is also known from Susa (Acropole, 3rd level)⁶. As to the so-called younger type with short spout, DE MECQUENEM, for instance, gives an illustration of a specimen deriving from Češme Ali, just to the south of Teheran.⁶

¹ HEURTLEY, Op. cit., p. 153, no. 115.

² G. D. WU, Op. cit., Fig. XXXIV, 14. It is possible, that black-polished pottery existed in China also before 2000 B. C.

³ H. INGOLT, Rapport préliminaire sur sept campagnes de fouilles à Hama en Syrie (1940), Pl. IV, 5., p. 18 and 28.

⁴ E. SCHMIDT, Excavations etc. Pl. XXXVII, H. 5040, p. 180.

⁵ R. GHIRSHMAN, Fouilles de Sialk I, Pl. XXVI, 2,3, LXXXVIII.

⁶ R. DE MECQUENEM, Notes sur la céramique peinte archaïque en Perse, fig. 2 and fig. 23, 1. (Mémoires de la mission archéologique de Perse, XX).

The earliest occurrence of these trough-like spouts seems thus to date back to the Jemdet Nasr period.

The biconical vessels with tubular spout perforated with three holes that were found in Shah Tepé in the intermediate layer between III and II (BE III s⁶ and E II s¹⁹) have an exact counterpart in Tureng Tepé.¹ I know of none such, on the other hand, from Tepé Hissar.

It has been pointed out, especially by H. FRANKFORT, that a striking kinship appears to exist between the *beak-spouted round or biconical jugs* that have been found in northern Persia and Anatolia and those which have been found on Crete.² The variety referred to as 'side-spouted', that is the only one known from Shah Tepé, does not survive the early Minoan III on Crete. It is considered by H. FRANKFORT to originate in Anatolia, where it is supposed to have arisen during the period of transition between Hissarlik I and II, »the stage of technical development represented at Yortan Kelembö«. This corresponds approximately to early Minoan II, about 2600 B. C. or somewhat later.³ Two complete side-spouted jugs with a partly tubular spout, cut-away and beak-shaped, have, as has already been mentioned, been found in Shah Tepé II b, near the boundary to II a (no. 1127 F II s⁴ and no. 377 C II 64, the latter one similar to the silver pitcher from Tepe Hissar III (H. 173)). But of the ninety odd loose spouts of a shape akin to the above that have otherwise been found in Shah Tepé a number were discovered in the upper part of layer III, while the majority belonged to II b. To layer II belonged also the four spouts whose beak was provided with a short lobe, drawn out backwards to the edge of the vessel. It is descendants of such spouts that have been found in Armenia and Tepé Sialk, and that are represented in the recently quoted works by FRANKFORT (Pl. III, 14, 15, 20, 22) and PRZEWORSKI (Fig. 25 b, c, d).

About on the same boundary between II b and II a² in Shah Tepé was found grave B II s⁷, that together with various vessels (some of older shape, some more recent, globular bottles, one with tubular spout) contained an *etched carnelian bead* that has been dated to about 2500 B. C. The oldest jugs with beak-shaped spouts that have been found in Shah Tepé may be considerably older; but for the complete specimens one comes to approximately the same dating as for the Cretan — early Minoan 2—3.

To judge the age of the spouted vessels or their fragments that were found in Shah Tepé only on the basis of the spouts is of course impossible, for black clay

¹ WULSIN, Excavations etc. Pl. XI, 1, p. 9.

² H. FRANKFORT, Archaeology and the Sumerian problem, pp. 58 et seq., Pl. III; South Persia as the place of origin for Pl. III, 22—26 is somewhat doubtful.

³ FORSDYKE, Prehistoric Aegean Pottery, p. XII (catalogue of the Greek etc. vases in the British Museum, I, 1, 1925).

C. W. BLEGEN, New Evidence for Dating the Settlements at Troy (Annual of the British School at Athens, XXXVII).

vessels with beak-shaped spouts were still being used in the middle or during the latter half of the 2nd millenium B. C., as is shown by the finds in Tepé Sialk's cemetery A.¹

Spouted bottles of the same character as those from Shah Tepé were found also in Tureng Tepé² and in Tepé Hissar III B and C.³

The »kettle-shaped vessel with spout» of greyish white colour that was found in Anau, South Kurgan (culture III)⁴ shows, by the bridge connecting the posterior lobe of the spout with the rim, that it belongs to a rather late stage in the development, and approaches finds from Tepé Sialk, cemetery A. If H. SCHMIDT's and R. GHIRSHMAN's dating of the respective periods were correct, this would agree splendidly; but in this matter, especially as regards culture III in Anau, there is still much uncertainty.

Stratum II b.

Cylindrical vessels, that are so characteristic of layer II b, and are but rarely seen in previous, older layers (no. 1433 G III s¹, no. 1699 E III s⁶, no. 1626 F III s¹³), have also been found in Tureng Tepé, or at least those forms with pierced lugs.⁵ In Tepé Hissar III B one finds the low, early form with slightly convex sides that we know from Shah Tepé E III s⁶; and in III C there is an unique specimen with slightly concave, rather high walls,⁶ whose counterpart in Shah Tepé is usually provided with projections for suspension. This 'pseudo-cylindrical' shape of vessel with somewhat inwardly curving walls survives for long in Iran. It is possible that it was originally produced in metal. In support of this assumption may be mentioned the fact that pseudo-cylindrical and cylindrical copper or bronze vases have been found in Tepé Giyan IV,⁷ and subsequently in Tepé Giyan III together with pseudo-cylindrical clay vessels with convex bottoms on three feet.⁸ Also characterized by pseudo-cylindrical form is a copper vessel, found in a grave in Tepé Hissar III B;⁹ and we find cylindrical alabaster vessels both in Tepé Hissar III C¹⁰ and in Shah Tepé II b and especially II a. They are characterized by expanding rims and bases. The pseudo-cylindrical shape survives in painted clay vessels and bronze vases from Luristan and Tepé Giyan II,¹¹ in the

¹ SYRIA XVI, Pl. XXXIX, 5. R. GHIRSHMAN, Fouilles de Sialk II, Pl. III, 7.

² WULSIN, Excavations, Pl. XI, 2.

³ E. SCHMIDT, Excavations, Pl. XXXVIII, H. 5089 (spouted bowl), Pl. XLI, H. 3511 (spouted globular pitcher with typical beak spout), fig. 107.

⁴ H. SCHMIDT, The Archaeological Excavations at Anau, Pl. 12, 1.

⁵ WULSIN, Excavations etc., Pl. XII, 2.

⁶ E. SCHMIDT, Excavations, Pl. XXXVIII, H. 4227, Pl. XLII, H. 3493, 4307.

⁷ CONTENAU ET GHIRSHMAN, Fouilles du Tepe Giyan, Pl. 31, no. 107, 2, 3, et no. 110, 4.

⁸ CONTENAU ET GHIRSHMAN, Op. cit., Pl. 29, no. 99, 3.

⁹ E. SCHMIDT, Excavations, Pl. LVII, H. 2381.

¹⁰ E. SCHMIDT, Excavations, Pl. LIX, H. 3523, H. 2248.

¹¹ E. HERZFELD, Iranische Denkmäler, 3, 4, Pl. XVII, XVIII, 5—8.

bronze vessel from Tepé Giyan grave 36 (period I) and in turned black clay vessels from Damghan village and nécropole A in Sialk (late bronze age).¹

The earliest cylindrical clay vessels that I know, however, are those from Susa I², and of these it is not possible to affirm definitely that they derive from a metal form, although this does not seem to be out of the question. But no metal vessels seem to have been found in Susa I.

Deep bowls or goblets appear earliest in layer III as enormous storage jars. The fine specimens of thin earthenware belong to layer II b; thereafter they become coarser again. The shape is not unusual in Tureng Tepé,³ but *there* we find also a type with perforated lugs for suspension,⁴ that is not found in Shah Tepé. In Tepé Hissar the shape is rare. The closest resemblance is provided by a wheel-made, red ware bowl (H. 3509), found in layer III C together with a cup of reddish brown earthenware (H. 3505).⁵

It is, of course, conceivable that the deep bowls constitute a further development of the hemispherical bowls of period III, but on the other hand this shape is common already in Susa I, and may have lived on and been transferred to black and grey ceramic.

Biconical, carinated jars belong in the main to layer II b, while jugs of similar form but with spout or handle were in many cases found in lower layers, which consequently indicated a higher age. Jars with a wide rim and a narrow base, concave belly and convex or conical shoulder, decorated with burnished ornaments in horizontal zones were rather common in Tureng Tepé.⁶ This pronounced form is scarcely to be found in Tepé Hissar. But in Hissar III B and III C, on the other hand, have been found biconical vessels with somewhat convex or almost straight conical belly, often supplied with an ornamental ridge encircling the broad neck.⁷

In Tepé Hissar III B there is a characteristic vessel that has been referred to by E. SCHMIDT as a 'bottle-pitcher', a sort of generally pear-shaped but sometimes biconical carafe with a high neck, at times offset at the base.⁸ Similar carafe-shaped bottles were common in Tureng Tepé, but here the comparatively low neck was as a rule surrounded by an actual raised ring, that sometimes took the form of a sort of collar.⁹ In Shah Tepé there is a biconical vessel with convex shoulder, rather concave belly and short, narrow neck surrounded by a ring

¹ R. GHIRSHMAN, Fouilles de Sialk II, Pl. III, 2.

² DE MORGAN, La Préhistoire orientale III, Pl. I; the same: Mémoires de la délégation en Perse XIII, Pl. 3.

³ WULSIN, Excavations, Pl. X, 1—3.

⁴ IBIDEM, Pl. X, 4.

⁵ E. SCHMIDT, Excavations, Pl. XLI, 3509, p. 184.

⁶ WULSIN, Excavations, Pl. VIII, 1—4, Pl. IX, 1.

⁷ E. SCHMIDT, Excavations, Pl. XXXVIII, H. 5172, Pl. XLII, H. 3584.

⁸ IBIDEM, Pl. XXXVII, H. 2227, 4971, 3841.

⁹ WULSIN, Excavations, Pl. VI, 2.

(no. 716 A II s¹²), certainly related to the types mentioned here. The late development to the actual collared flask or bottle may be observed in a fragment of neck found in Shah Tepé (Pl. LXII, Fig. 496). The height of this fragment is 6.2 cm., the width up to 5.1 cm., width of collar 6.0 cm. Unfortunately, the level at which it was found is not known with certainty. I have, however, drawn attention to the fact¹ that we have here a counterpart to the collar-flasks from the dolmen age and the gang-grave age that have been found in Denmark and the south of Sweden, north-western Germany, East Germany, especially the region of the Weichsel down as far as Silesia, Bohemia and Moravia, and finally Galicia. The collar-flasks have been regarded by certain authors (KOSSINNA, ÅBERG) as originating in the nordic countries, and their dissemination in the south-east is taken by these writers to signify an Indo-European advance. Other writers (S. MÜLLER, J. BRØNDSTED, G. CHILDE) are of opinion that the type came to the north from the south or south-east. At all events the Iranian type probably developed independently in its region, possibly with the gourd as a model.

The small oval or globular jars with string-hole projections. (Figs. 375, 376) occurred also in Tureng Tepé,² but not, as far as one can see, in Tepé Hissar. They seem to be confined to the steppe region. The same applies to *the curved, egg-shaped bottles* with as a rule concave belly and relatively high, splayed neck. (Fig. 380), that are not uncommon in Tureng Tepé³ but do not occur in Tepé Hissar. *Conical bowls* with flat base were found in Tureng Tepé⁴ and occur also in Tepé Hissar (III B and III C),⁵ where they are probably quite common.

The truncated conical jar-covers with handle do not seem to have been observed in Iran outside of Shah Tepé. One seems to note a certain kinship between these and the *cylindrical jar-covers with upper handle* that were discovered in Thermi (Asia Minor)⁶ and in Troy-Hissarlik⁷ I and II—V, thus in the western part of Asia Minor and presumably contemporaneous with one another and with the Shah Tepé covers.

Stratum II a².

The later globular jugs with tubular spout, as also *the round-bottomed bottles* are not found in Tureng Tepé. On the other hand, such jugs or 'spouted pitchers', as they are called by E. SCHMIDT, are rather common in Tepé Hissar III C.⁸ They are decorated with burnished ornaments in horizontal zones, as are

¹ T. J. ARNE, *Kragflaskor från Turkmensteppen i norra Iran* (Fornvännen 1942, h. 3).

² WULSIN, *Excavations*, Pl. XIII, 4.

³ IBIDEM, Pl. IV, 1, 2. Pl. XII, 1, the former with narrow and the latter with wide neck.

⁴ IBIDEM, Pl. X, 5, 6 (the first on a kitchen floor, the latter in a grave).

⁵ E. SCHMIDT, *Excavations*, Pl. XLII, H. 2841, 2870. Pl. XXXVIII, H. 5149, 5189, 4026.

⁶ W. LAMB, *Excavations at Thermi*, Pl. IX, 398, Pl. XL, XII, b. c. (town IV, 2700—2500).

⁷ H. SCHMIDT, *H. Schliemanns Sammlung trojanischer Altertümer*, p. 7, no. 196, p. 21, no. 433, p. 23.

⁸ E. SCHMIDT, *Excavations*, Pl. XLI, H. 4296.

also a couple of the Shah Tepé vessels. I have not been able to find any good counterparts in Susa or Tepé Giyan, nor do there seem to be any such in Tepé Sialk or Persepolis. One is more likely to find related forms in northern Mesopotamia during the Akkad stage.¹ In close agreement with the *globular bottles* of Shah Tepé are a number of bottles with discoid rim, found in Tepé Hissar III C.² The *low, biconical, carinated jars* are absent from both Tureng Tepé and Tepé Hissar.

Footed vessels occur to some extent in Shah Tepé II a². In Tureng Tepé they probably came to an end earlier. »One burial at elevation 102.20 yielded a goblet with conical bowl and base.»³ This goblet was stemmed. A similar one is known from Tepé Hissar III A, in which layer the youngest stemmed and footed vessels disappear from this place, with the exception of the braziers.⁴

The *globular coupled, triple-jugs* are rare in Iran and Irak. No such vessels are mentioned from Tureng Tepé and Tepé Hissar; but a cup-form without the vertical handle appears in Susa II.⁵ Other triple-cups occurred in the cemetery B, of Tepé Sialk (Syria XVI, Rapport préliminaire etc., Fig. 11). To produce a communicating *triple vessel* was naturally no more difficult than to produce a *twin vessel*, and such are known from as early as the Egyptian pre-dynastic neolithic stone age and somewhat later.⁶ But triple vases occur most frequently in the Aegean region round the coasts of the eastern Mediterranean and in south-east Europe to the north-west of the Black Sea. In Troy-Hissarlik II—V Schliemann found a triple cup.⁷ Twin vessels, also »mit Bügelhenkel» were more common there. The combination of 2—4 connected vessels is common on Cyprus, both in red polished and in white painted ware.⁸ C. C. EDGAR, one of the editors of »The Excavations at Phylacopi in Melos» adduces an instance of double vases with white slip and mat black paint,⁹ and adds: »Composite vases, consisting of two, three or four cups are of common occurrence in this period. The practice of making multiple vases is so common and widespread that it is unnecessary to cite any of the numerous parallels from the Aegean itself and from the surrounding civilizations.» One finds them also on Crete, e. g. at Koumasa, where they belong

¹ Cf. e. g. V. CHRISTIAN, Op. cit., Pl. 384, 1, 2 from Til Barsip.

² E. SCHMIDT, Excavations, Pl. XLI, H. 3490.

³ WULSIN, Excavations, Pl. XI, 3, p. 9.

⁴ E. SCHMIDT, Excavations, Pl. XXXVI, H. 5021, p. 178.

⁵ POTTIER, Étude etc., Pl. XXXII, 9, p. 154 (Délégation en Perse XIII), p. 45: »le groupe de trois coupelles conjuguées».

⁶ GORDON CHILDE, New Light etc., fig. 17, p. 61: »a double vase, with intercommunicating compartments, is represented by one fragment (from Merimde); J. DE MORGAN, Préhistoire orientale, II, Pl. IV, 2.

⁷ H. SCHMIDT, Schliemanns Samml. Katalog, p. 75, »1746, 3 zusammengekoppelte kleine Näpfe mit je einem Fusse, aus roher, grauer Ware.»

⁸ DIKAIOS, op. cit. (Archaeologia LXXXVIII). Such vessels in the graves 13 and 15 at Vounous are dated to the early Cypriot period II a (2500—2300 B. C.), others in grave 9 to period III A (2300—2100); GJERSTAD, Studies on Prehistoric Cyprus, pp. 119, 115, figures.

⁹ C. C. EDGAR, Op. cit., Pl. XI, 12, p. 102.

to early Minoan III.¹ The form, however, survives for long. A side-spouted, triple jar from late Mycenæan time is known from Jalysos on Rhodes,² and others from the same period have been found both on Crete and the Greek mainland. Prehistoric twin bowls have been found in Bulgaria.³ In Hungary and south-eastern Germany one finds composite or multiple vessels from the bronze age and the Hallstatt period within the so-called Pannonian and Lausitz cultures.⁴

Stratum II a¹.

»The oval or oblong canteen with two cord handles on the shoulders is the principal ceramic guide of the last substratum of Tepé Hissar (Hissar II C),» says E. SCHMIDT,⁵ who also re-produces pictures of a number of such canteens. One fragmentary vessel shows a winding snake in relief. These canteens have not been observed in Tureng Tepé; and this circumstance, as well as some other facts, makes it probable that this community ceased to exist earlier than Shah Tepé and Tepé Hissar. At all events, the burial ground in Tureng Tepé's Mound C was no longer used.

As regards the occurrence of the snake ornament in the Near East and its significance, the reader is referred to the article »Schlange» in EBERTS Reallexikon XI, p. 264, and to P. TOSCANNE'S thesis: »Études sur le serpent figure et symbole dans l'antiquité élamite (Délégation en Perse, Mémoires XII), especially pages 209 et seq. Representations of snakes in relief were found on several clay vessels in Susa. I have, however, not found any precise dating of these clay vessels.

The symmetrically oval bottles with high and plain or slightly splayed necks, found both in Shah Tepé (e. g. no. 148 B II s¹) and in Tepé Hissar, are in shape reminiscent of the oval canteens, and belong to the youngest prehistoric stage.⁶ These, too, are not found in Tureng Tepé. The form seems to have arisen from a combination of the high neck of certain *spouted, globular bottles* and the oval body of a number of vessels in layers II b and a² (*curved, egg-shaped bottles*, with bellies of a more convex form).

To stratum II a¹ belong a number of *coarse earthenware cooking utensils* with handles. In Tureng Tepé, certainly, some coarse ware occurred, »evidently used for household purposes, viz. large bowls and jars and flat, shallow pans with

¹ S. XANTHOUDIDES, The Vaulted Tombs of Messarà, Pl. XX, 4174; O. MONTELIUS, La Grèce préclassique, p. 21, fig. 67.

² FORSDYKE, Catalogue, Prehist. Aegean Pottery, p. 171, A. 943. Pl. X.

³ EBERTS Reallexikon, VIII, Pl. 18 b.

⁴ G. CHILDE, The Danube in Prehistory, p. 281, fig. 154 (»Multiple vases, rattles, theriomorphs, and various quaint shapes were manufactured in Pannonian ware»); EBERTS Reallexikon, VII, Lausitzische Kultur, Pl. 198, 1, (latest bronze age — early iron age).

⁵ E. SCHMIDT, Excavations, p. 308, Pl. XL, the two top rows, fig. 108, H. 4219.

⁶ E. SCHMIDT, Excavations, Pl. XLI, H. 5223, H. 3503.

a lip to pour from.»¹ But the type we have from Shah Tepé does not seem to exist in Tureng Tepé. There is, however, a specimen of this type from Tepé Hissar III C,² »a pot supplied with definite pitcher-handle, wheel-made(?), with rough fire-worn, grey and red-brown surface, found with the skull of a horse.» »Another cooking vessel, crude, fire-worn, with knob-handles on opposite sides of the short neck», was found in a grave in Tepé Hissar III B.³ The coarse ware in Tepé Hissar thus extends over the two youngest periods; but the various types of vessel are unique. A real handle has, moreover, only been found on a hand-made pitcher from Tepé Hissar III C.⁴ The lack of clay vessels with real handles is rather marked in both Tepé Hissar and Tureng Tepé. In the last-named place only one burial yielded a pot with a handle; but owing to the slight scope of the investigation and the lack of data as to levels one is not in a position to say what this means. In Shah Tepé, as has already been mentioned (p. 210), there have been found at least 8 different types of vessel with handle and belonging to different strata, from the younger part of layer III upwards.

The big, hemispherical bowls with open, trough-shaped spouts have no counterparts in Tureng Tepé and scarcely in Tepé Hissar, unless one may classify as such »a rather crude, spouted bowl with red-brown surface and red-brown, medium paste»⁵ from Hissar III C. Concerning the red ware, E. SCHMIDT⁶ says that »it is a significant fact that in the uppermost burials of the mound, in the sub-layer in consideration (III C), a few plain red vessels were found mingled with the prevailing gray ware and the alabaster vessels typical of this period.» In Shah Tepé's topmost layer there was also found in a grave (G II s¹ a) a bowl with short, open spout of *red ware*, and in the majority of cases the red pottery probably derives from the same late epoch.

Painted pottery.

Mention has already been made (p. 168) of the similarity in colour and simple geometric decoration that one finds in the painted ware in Shah Tepé and in Tepé Hissar I A. In Tepé Hissar II A occur also »gray on brown-red pots, the patterns of which closely imitate the designs of the Hissar I A ware». The patterns of the painted Tepé Hissar pottery, however, are frequently arranged in friezes divided into metopes or horizontal zones extending in no case more than a little way below the middle part. In the case of the chalices, though, the foot is as a rule ornamented with vertical lines. The consistently geometrical vertical pattern from mouth to base seems to be peculiar to

¹ WULSIN, Excavations, p. 9.

² E. SCHMIDT, Excavations, Pl. XLI, H. 5235, p. 182.

³ IBIDEM, Pl. XXXVII, H. 2358.

⁴ IBIDEM, Pl. XLI, H. 2871, p. 182.

⁵ E. SCHMIDT, Excavations, Pl. XLI, H. 3315, p. 184.

⁶ E. SCHMIDT, Op. cit., p. 181.

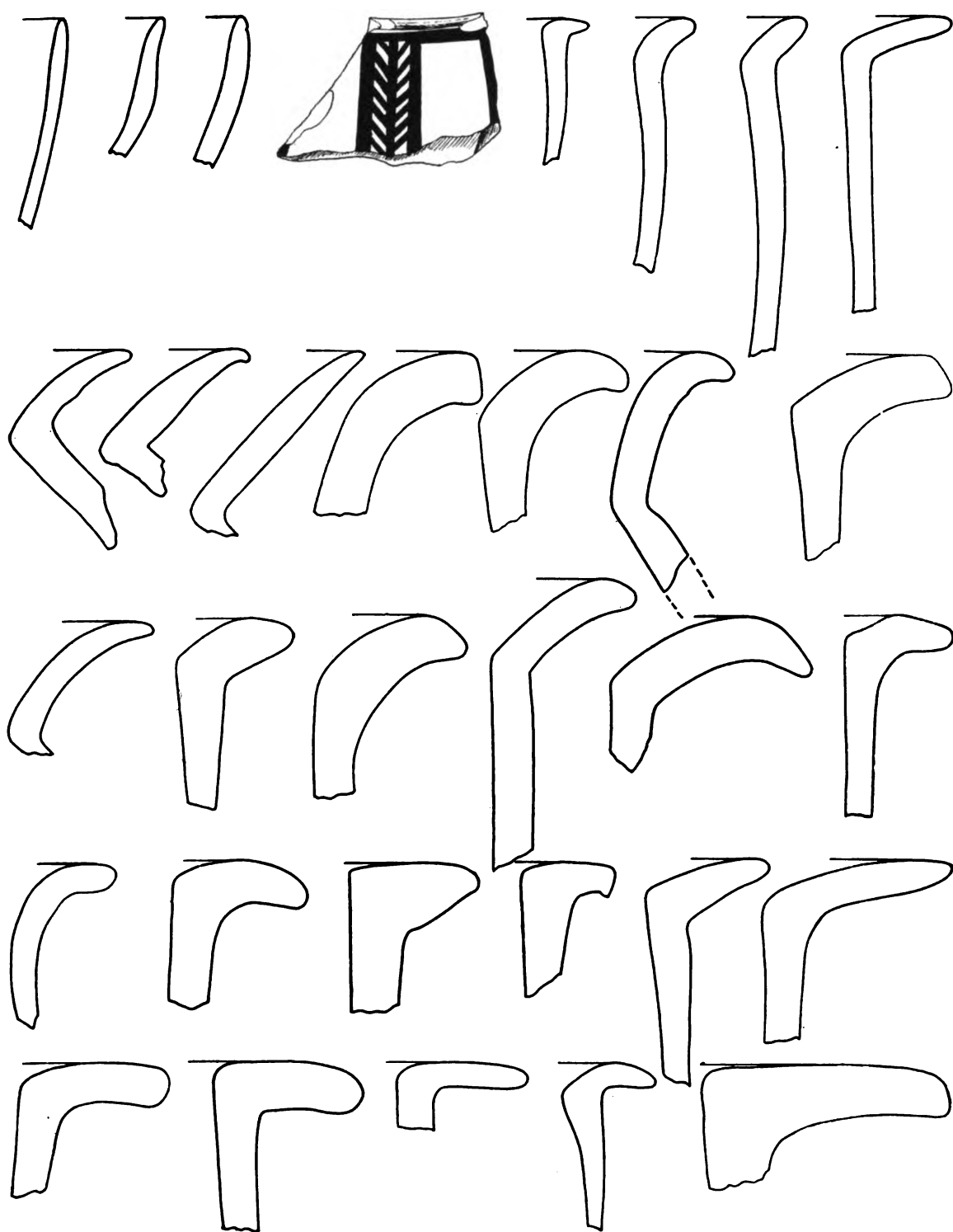


Fig. 524

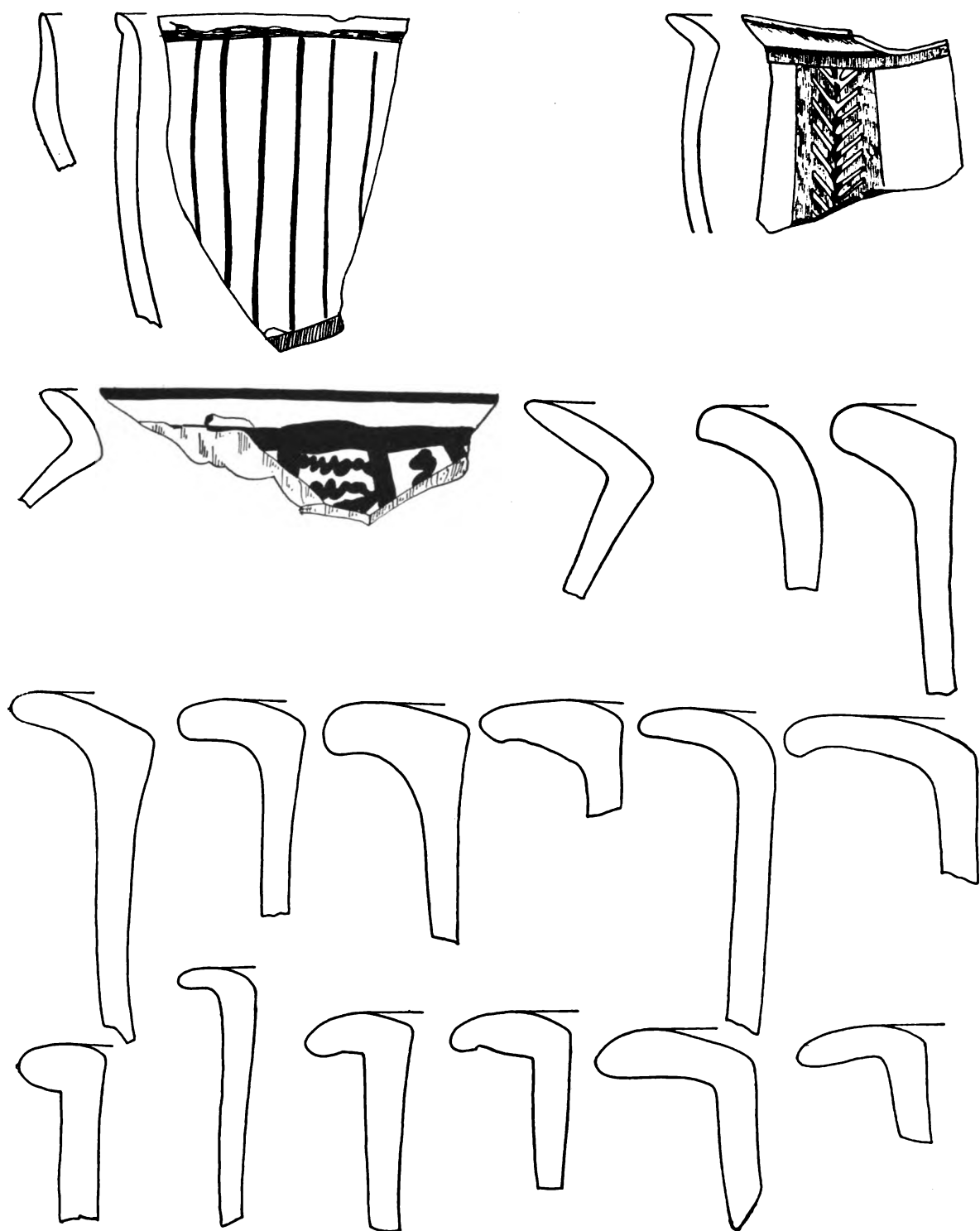


Fig. 525

the Shah Tepé pottery. Vertical zig-zag and wavy lines appear early in Tepé Hissar (I A—C), cross-hatched panels in I B—C, and herring-bone patterns, round patches and concentric circles¹ in I C. The earlier and simpler of these ornamental motifs appear also in II A. From the ornamental point of view — apart from the animal motifs and the pronounced vertical arrangement — one may say that the painted pottery of Shah Tepé comes nearest to Tepé Hissar I C. The quality of the ware and the colours, on the other hand, show a great resemblance to Tepé Hissar I A, and seem to preserve an older tradition that has been revived in Tepé Hissar II A.² It is conceivable that this tradition that has been preserved on the steppe has influenced Tepé Hissar II A at the same time as it introduced to the plateau-country the black and grey pottery. In this way one could provide the solution for the problem of the «ceramic atavism» of which E. SCHMIDT speaks (Excavations at Tepé Hissar, p. 304). The forms are more independent and have but slight contact with Tepé Hissar but are connected with the contemporaneous black or grey-black pottery in Shah Tepé itself.

The neck of the painted jars in Tepé Hissar I B and C ends as a rule with a plain rim, upright or slightly outward-curving. On the other hand, the painted clay vessels in Shah Tepé (especially storage jars) are characterized by a strongly marked, outward-curving rim, often with a broad, horizontal or slightly rounded upper edge. This rim may be thick or thin, narrow or broad (up to 8 cm); it may be curved in the form of a bow or bent in an obtuse or right-angle. The commonly reddish yellow, sometimes reddish grey earthenware is covered with a slip, varying in colour between orange-yellow, grey-yellow, brown-yellow, grey-red, dark red and brown-red and having simple painted band or line-ornamentation in black-grey to black colour, in some cases as a band under the neck or rim, in others transversely over the top of the rim and arranged in groups (Figs. 524 and 525). The thickness of the preserved rims is in most cases in proportion to the size of the vessel. The width of the latter seems as a rule to have been from 30 to 60 cm, in one case over 1.0 m. The form of the vessels and the rims seems to have been about the same as that of the grey and black storage jars.

The few painted sherds in Tureng Tepé show a close relationship with Shah Tepé III, and this is probably the case with most of the other painted steppe-pottery.

A glance at the painted pottery in Anau shows that this diverges considerably from that in Shah Tepé. In culture I (the north kurgan) there are sherds with dark brown-black geometrical patterns painted on a deep red slip, that is very reminiscent of that in Shah Tepé (Anau Pl. 24.5; 27.2). Also higher in culture

¹ Note especially figs. 41—43 in E. SCHMIDT, Excavations etc.

² In respect of the colours, the development in Tepé Hissar is according to E. Schmidt such that «the brown-red ground of the I A vessels became buff or light brown during I B, and was finally displaced, to a large extent, by the light greyish brown or even greyish white surface of the I C vessels». (E. SCHMIDT, Excavations, p. 48).

II, though probably of younger date than this, similar sherds have been found (Anau Pl. 32.3). In general, the black-on-red painted ware in Anau I and II is coarse and mixed with gravel — much worse than in Shah Tepé — and the geometrical patterns diverge. The triangle plays an important rôle in Anau as a basic motif, but in Shah Tepé it plays no rôle at all.

Also in Rey and Persepolis there have been finds of sherds of black-on-red painted ware akin to that from Tepé Hissar I A and in colour and the quality of the ware reminiscent of Shah Tepé's pottery, though older than this. If one has access to only a few isolated sherds of such pottery from Yang Shao in Honan, China, and from Dimini in Thessaly, one can well imagine a close mutual relationship and contemporaneity. The relationship perhaps exists, though it is remote and it is still difficult to throw much light on the genealogy. The periods certainly vary for the different makes, and one must take into account a whole series of ceramic provinces, each of which must be delimited and dated also with the help of other phenomena.

Beyond the Persian frontier, the carinated jars from Jemdet Nasr seem to me to show a great resemblance to the low-bellied carinated jars from Shah Tepé, both the painted and the unpainted ones. The shape is very similar, only the rim of the neck is more spread out and slightly overhanging. A red slip with black or dark brown, geometrical, vertical pattern is seen also on these vessels; but neither the red slip nor the pattern generally covers more than a part of the vessel, and the pattern — vertical lines and cross-hatched bands — is applied on the cream-coloured part of the vessel, not on the red.

SCULPTURES OF CLAY AND STONE

Especially interesting are the sculptural works of art found at different depths. They consist of small animal and female statuettes, about two dozen of the former, but only three of the latter. All are of clay except a small stone idol of very primitive character (Fig. 526), with exact parallels in Tureng Tepé¹ and in Alişar in Anatolia.² The broad shoulders with protruding stumps of arms are characteristic of many other such stone idols, whose heads are sometimes more pronounced. We know such from Tepé Hissar,³ from Troy,⁴

¹ WULSIN, Excavations at Tureng Tepé, Pl. XVII, figs. 3—5 (stone): A Survey of Persian Art, Vol. I, fig. 21.

² H. Z. KOŞAY, Ahlatlibel Hafriyati, fig. 5 on p. 86. E. SCHMIDT, Anatolia through the Ages, fig. 93 (clay); BIRTEL, Präh. Forschung in Kleinasien, Pl. IX, 5.

³ E. SCHMIDT, Excavations at Tepé Hissar, fig. 114 (alabaster effigy of a woman from Hissar III C), Pl. XLV H 3699, clay statuette from layer III.

⁴ H. SCHMIDT, Heinrich Schliemann's Samml., pp. 279—280.

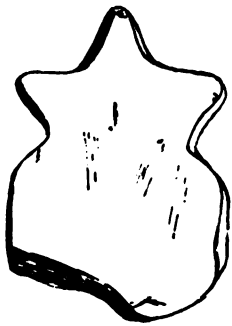


Fig. 526

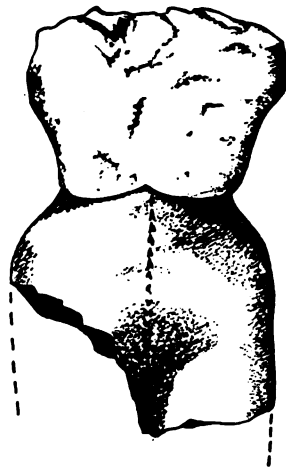


Fig. 527 a, b

from Khafaji,¹ Tell Asmar, Tepé Gawra, Tell Billa and Nuzi in Mesopotamia, and also from India,² Crete and the Greek islands.³ If one wishes to seek analogies still farther west one may find them in the primitive clay statuettes that have been found in Laibacher Moor.⁴ But also clay statuettes from Cucuteni in Rumania and other places in south-east Europe have a similar trunk with straight shoulders and remains of arm-stumps, and also, sometimes, a rather rudimentary head. In these, however, the legs are often at least indicated.

The little grey flat slate statuette from Shah Tepé measures 4.15×3.00 cm. (H I, no. 1043). It has evidently been thrown up from the youngest prehistoric layer II a¹.

One of the two female clay statuettes (A II 46 no. 116; ± 2.10 m.) is brown in colour, fairly hard baked, and polished. (Fig. 527 a, b. and Pl. LXVII, Fig. 527 c) All that remains is the torso, 8.5×5.65 cm. The breasts seem to have been cut off. The pubis is well marked. The »seam» passing vertically across the abdomen is striking but not quite easy to explain (tattooing?). Similar but better preserved

¹ V. CHRISTIAN, *Op. cit.* Pl. 261, I, 2.

H. FRANKFORT, *Iraq Excavations 1932/33*, Chicago 1934, fig. 63 (»a small figure of the mother goddess The type is not otherwise known in Mesopotamia but occurs in the Aegean region and from there eastwards as far as Transcaspia. Thus again proof is offered of the connection with the north which was maintained by the people of Mesopotamia in the early dynastic period). THE SAME, *Oriental Institute Discoveries in Iraq 1933/34*, figs. 24, 28. Pl. IV, 2—4 (Communications 19, Chicago) »In publishing the Khafaje example I stated that the type was »not otherwise known in Mesopotamia.» That seems to hold for the southern M. but not for the north Similar figurines occur for the southern M. but not for the north Similar figurines occur at Tepé Gawra. Tell Billa and Nuzi.» R. STARR, *Nuzi (1937)*, Pl. 57 R.

² S. CORBIAU, *New Finds in the Indus Valley*, fig. 3, 1—6 (*Iraq IV*, 1).

³ A. EVANS, *The Palace of Minos I*, pp. 45—52. An illustrated survey of these primitive statuettes is given here.

⁴ M. HOERNES, *Urgesch. d. bild. Kunst in Europa (1915)*, p. 374.

statuettes were found in Tureng Tepé.¹ (Pl. LXVII, Fig. 527 e) They were »about 25 cm. high, standing with the hands holding the breasts. Each ear is pierced with three to five holes for earrings». Besides the five well preserved female statuettes of Tureng Tepé there were two male ones. They all belonged to the younger layers. Mention may also be made here of the find that was made in 1841 in Tureng Tepé and that was treated by DE BODE (*Archaeologia* 1844) and by ROSTOVITZ (Journal of Egypt. Archaeology VI, 1, 1920). Besides a spear-head of copper and various other interesting objects, a female torso was found. This was probably of hard baked clay (or alabaster), and had well modelled breasts.

The spear-head of Tureng Tepé is regarded by A. EVANS as »Sumerian» and as belonging to at least the middle of the 3rd millenium B. C. [A. EVANS, *The Palace of Minos* I, p. 49. M. B. SMITH, *Asterābād, an Introductory Note* (Supplement to the Bull. of the American Inst. f. Persian Art and Arch., March 1932).]

The bodies are uncommonly well modelled. The ears, pierced to receive several earrings, remind one of idols from Cyprus and Tell Ta'annek in Palestine,² from Assur,³ but also of the statuettes of the Tripolye circle in Galicia, Rumania and Ukraine (Koszyłowce, Bilcza Złota)⁴ etc.

Only the breast portion remains of the second black clay statuette (F II 16 no. 1358, +3.80 m.; Pl. LXVII, Fig. 528). Length 4 cm., breadth 5.25 cm. Also in Tureng Tepé were found black-grey female statuettes (with outstretched arms). The female statuettes have generally been regarded as fertility goddesses; but one must say that the figures have been treated with little respect when for example the breasts have been purposely knocked off, as is the case with the brown Shah Tepé statuette.

Although it was found higher up in the mound the black statuette belongs to an older layer (II b) than the brown (II a²). Also in Tureng Tepé the black-grey statuettes were found at a greater depth (104.55) than the brown ones (105.80). In neither of the finding-places do they go back to the oldest period. Also in Tepé Hissar II A a similar torso was found (»an unusually naturalistic representation of a woman») (E. Schmidt, op. cit., p. 117, Pl. XXVII B, H 3735).

Besides the female statuettes mentioned here, a black-grey clay vessel in the shape of a female torso was found, also in Shah Tepé. (G II s⁷ no. 1004, +6.00 m., Fig. 410). It lay in a skeleton-grave together with an alabaster cup just at the boundary between II A² and II A¹. Nose and breasts are modelled. The body

¹ WULSIN, op. cit. Pl. XV. A. SURVEY OF PERSIAN ART, Vol. I, pp. 165 and 195 (Phyllis Ackerman, *Cult Figurines*).

² G. CONTENAU, *La déesse nue babylonienne*, 1914, figs. 78 and 110—111.

³ V. CHRISTIAN, Op. cit. Pl. 444, 2.

⁴ HELENA CEHAK, *Plastyka eneolitycznej kultury ceramiki malowanej w Polsce* (S'wiatowit XIV et XV, 1933).

H. SCHMIDT, *Cucuteni*, Pl. 31.5, 11.

A. FEDOROWSKY, *Instructions et programme conc. la recherche et le classement des monuments archéologiques*, Charkov 1927, figs. 19, 20.

seems to be patterned with vertical, bordered hatchings alternating in two directions. Height 14.5 cm., breadth 16.5 cm.

We find, also here, the projecting shoulders with their arm-stumps that we have seen on the small stone idols and the alabaster piece from Tepé Hissar. The latter place can also show a clay vessel of the same kind, found together with a male skeleton in Hissar III C.¹ »It represents a woman of the stereotyped, though slightly modified form of Hissar III male figurines. The breasts are pronounced cones; the arms are conoid stumps; there is no head, simply the cylindrical vessel neck».

The idea of giving a clay vessel the form of a human torso, or ornamenting it with a face and other human attributes is of course widely spread. The nearest parallels in time and space, though not in form, to the Iranian clay vessels with female shapes are the »face-urns» in Troy. The best foreign parallel to our vessel has been found in Crete at Koumasa.² »This vessel, from region 4, represents a woman's bust. The head is flat-topped like the well known Mycenæan figurines. The chest, too, is flat, though the lower part is rounded to widen the base. Rope-like bands in relief from the arms; the breasts too, are indicated in relief by small buttons. A tight necklace is shown by two narrow bands in relief. The spout of the vessel rises from the crook of the woman's left arm looking like a vase that she is carrying. Behind there is an upright handle. Red glaze decoration in early geometric style of E. M. II. H. 16 cm.» The square shape with projecting shoulder is the same as that of the Shah Tepé-vessel. A more elaborated specimen of such a vase representing a painted female figure holding her breasts has been found in Mochlos.³ It belongs to the period E. M. III and was found together with side-spouted jugs with angular outline from M. M. I and other vessels. More rounded cretan jugs of this type belong already to E. M. II.

Twenty-five specimens of animal statuettes were found in Shah Tepé, of which (Pl. LXVII, Fig. 529 a, Figs. 1—21) number 1 is without particulars as to the position in which it was discovered, 10 are from layer III, 13 from layer II and 1 in layer I, to which it was certainly thrown up in a later excavation. The animal figures are never quite intact. The legs are nearly always knocked off, even where they have commonly consisted of only short stumps. In the same way, the head is frequently missing. In those cases where there is a head one always finds remains of horns. The back is slightly concave, the tail is attached high up and directed downwards, tightly pressed to the body. As a rule, the animals probably represent sheep. This is particularly evident in the case of figure no. 574 (D III; Pl. LXVIII, Fig. 530) with the convex brow and base of horns. Also nos. 585 (C II) and 787 (B II), with two horns curving inwards in front of the forehead, seem to belong to the sheep family. Another head, no. 387 (C II79; Pl. LXVIII,

¹ E. SCHMIDT, *Excavations at Tepé Hissar*, p. 194, fig. 115, Pl. XLVI, H. 2790.

² S. XANTHOUDIDES, *The vaulted tombs of Mesarà*, p. 39, no. 4137, Plates II and XIX.

³ R. B. SEAGER, *Explorations in the island of Mochlos*, 1912, tomb XIII, Fig. 32 XIII g, 34., p. 64.

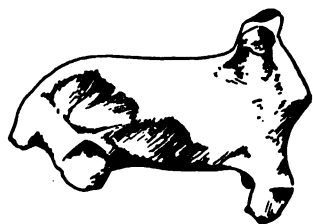


Fig. 529 a

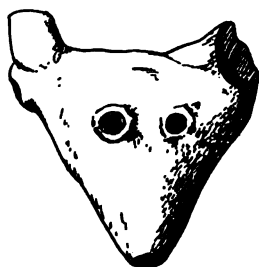


Fig. 531

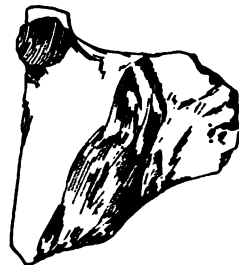


Fig. 531), with triangular, flat forehead and remains of erect, rather incurving (?) horns, is presumably meant to represent a cow.

About ten animal statuettes have long, cylindrical bodies with lengths varying between 7.00 and 13.8 cm. Other figures vary in length between 3.35 and 6.8 cm., and the longest of these (no. 1148, E III; Pl. LXVIII, Fig. 532) with preserved rear legs, may be characterized as a transitional form. The long statuettes are as a rule red or black; the short ones are grey or yellow-grey, in three cases black. In all, 8 statuettes covered with red slip were found [nos. 787 (II), 812 (II) (Pl. LXVIII, Fig. 533), 1084 (II), 1741 (III), 731 (II—III), 1375 (II b), 1148 (III) (Pl. LXVIII, Fig. 532), 1672 (III), the four last being also painted with black lines]. The black animal figures were five in number, 2 of them being long [nos. 880 (II), 1555 (III) (Pl. LXVIII, Fig. 534)] and 3 short [nos. 277 (II), 455 (III), 685 (III)]. Of the 12 grey statuettes (Pl. LXVIII, Fig. 535; no. 732) one was long (no. 1374 II). The two longest animal figures, both 13.8 cm., one painted red and black (no. 1375, F II11), the other black (no. 155, G III5), are characterized by a deep, longitudinal groove on the underside of the belly. (Pl. LXVIII, Fig. 536). It is possible that these figures were fitted on a support of other material.

Animal statuettes are, as is known, very widely distributed; and especially the small figures of grey clay are so little characteristic that they may be found anywhere at all in West and Central Asia, and also within the Tripolie culture of south-east Europe. Many similar figures are known from Tepé Hissar III, but, too, in II and I, in which latter layer also painted images occur. The commonly dark brown bands or lines are, however, painted on grey or light brown ground, not on red.¹

Simple little animal statuettes are also found in Tepé Sialk II and III², in Persepolis' »stone-age mound»³ and in Tepé Giyan.⁴ It may be remembered that the female statuettes in Cucuteni, belonging to the younger B-culture, were painted in red and black, while the animal figures were not painted; this is thus just the contrary of the case in Iran.

¹ E. SCHMIDT, *Op. cit.* Pl. XIV and XXVII B.

² GHIRSHMAN, *Fouilles etc.* Pl. LIII, 7—9, LXXXV.

³ HERZFELD, *Op. cit.* Pl. XXX.

⁴ CONTENAU et GHIRSHMAN, *Fouilles du Tepé Giyan*, p. 50, Pl. 36, 13, Pl. 37, 6 (painted in black and red, probably mostly in layer 3).

Among the sculptures may also be mentioned a little black »clay vessel« in the form of a bird (?) (B II10, no. 215, +5.50 m; Fig. 537 a and Pl. LXVIII, Fig. 537). The head has been knocked off, the tail is pointed and provided with a little hole. There is also a hole in the back, and the body is hollow. »The bird« stands on one foot, ellipsoid, splayed and slightly hollowed from below. The two holes indicate that this object was used as musical instrument, a kind of »toy ocarina« or whistle. It is also conceivable that the hole in the tail served instead for the insertion of feathers, if the image really did represent a bird.

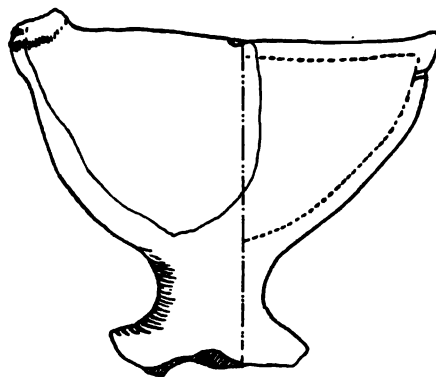


Fig. 537 a

Such theriomorphic clay vessels are known from several places. No birds were found in Tepé Hissar, but a painted vessel in the form of a ram was found. This had four feet and a round open neck on top of the back.¹ A painted sheep (?) of clay, in shape resembling the vase from Shah Tepé but provided with an open neck on the back like the Tepé Hissar vessel, was found in Tepé Sialk III, 7.²

Certain clay figures from Kish in Mesopotamia remind one strongly of the »clay bird« from Shah Tepé,³ and one such with neck on the back comes from Tell Asmar.⁴ Clay birds are also known from India. »Toys of this kind are common at Mohenjo-daro and are invariably in the form of a bird, hollow within and with a small hole in the back near the tail, which when blown into produces a shrill whistle«⁵ These birds also have pedestal-like bases.

On the island of Crete theriomorphic vases occur during Early Minoan III. »A remarkable feature of this period is the appearance of vessels grotesquely moulded in human or animal form«.⁶ Especially during the youngest bronze-age and the older iron-age were theriomorphic vases common on Cyprus,⁷ and even in our day such vases have been used in the Taurus mountain-region situated opposite Cyprus (e. g. in the town of Sis; Pl. LXIX, Fig. 538).

Vases in the shape of birds, with a special foot and with neck on the back, survived in the Talych-region in north-west Iran⁸ at the beginning of the iron-age; and it is well known that similar vessels without neck occur in the so-called Laus-

¹ E. SCHMIDT, *Op. cit.*, fig. 113 (III C).

² R. GHIRSHMAN, *Op. cit.* Pl. XIX, 2.

³ N. CHRISTIAN, *Op. cit.*, Pl. 230, 3.

⁴ FRANKFORT, *Iraq Excavations 1932—1933*, fig. 27 (Ritual pot in the shape of a bird).

⁵ MARSHALL and others, *Opus cit.* II p. 551. III, Pl. CLIII, 17, 18.

⁶ A. EVANS, *The Palace of Minos I*. p. 115, figs. 84, 85.

⁷ E. GJERSTAD, *Studies on Prehistoric Cyprus*, p. 226 (animal-shaped vases 1—3).

⁸ J. DE MORGAN, *La préhistoire orientale III*, fig. 269.

itz-culture in Silesia¹ and on Swiss sites.² M. HOERNES refers to this curious circumstance in the words: »Im Bereiche der Keramik erscheint die Hallstattperiode nicht als eine Fortsetzung der Bronzezeit, sondern als eine solche der jüngeren Steinzeit.«

VARIOUS OBJECTS OF BURNT OR BAKED CLAY

a) *Clay moulds and crucibles.*

In Shah Tepé were found a *mould* (no. 591 A III) and two or three *crucibles* of clay (no. 428 C II67, +4.10 m.; no. 511 D III, no. 487 C II). The mould, which is broken off in the middle, has the form of a clumsy boat with a flat bottom and a concavity under the stern. (Pl. LXIX, Fig. 539 a, b.) On the inside one sees in the coarse, thick walls a broad groove with concave rounded bottom and a hollowed-out round hole in the »stern-end«. The groove is somewhat broader towards the broken-off end. On the edges and bottom of the groove a fine, probably burnt coating of clay has been smeared. On the upper surface of the walls there is a slight formation of recement with green spots of verdigris. It is possible that the mould was used for the manufacture of some sort of copper hammer, though no actual implements of this sort are known from Shah Tepé. In its present state the mould is 14 cm. in length, 8.8 cm. in breadth and 8.5 cm. in height. The inner groove is now 11 cm. in length (originally perhaps double this length) and up to 4 cm. in breadth and 3 cm. deep. Reckoned from the surface, the hole is 4.2 cm. deep and from 2.0 to 1.5 cm. in diameter.

The two crucibles have the form of clumsy, unpolished clay bowls. (Pl. LXIX, Fig. 540, 541). The one (no. 428 C II67) is oblong, and measures 15.5 × 11.2 × 7.6 cm. The other (no. 511 D III) is rounder, and measures 8.45 × 7.00 × 4.9 cm. A third cuplike clay object, now in Teheran, is also presumably a crucible (no. 487 C II).

From Tepé Hissar we have a clay mould that is undoubtedly related to that which was found in Shah Tepé. Dr. E. SCHMIDT describes it as follows: »In Hissar III B refuse we found an important mould (H. 3577) for the making of copper mattocks. The shoe-shaped object has apparently never been used, since the interior does not show any traces of copper. The specimen is grayish brown with gray stains, rather coarse with mud-brick-like paste.«³

The chief difference is that the Tepé Hissar hammer has the shafthole in the middle, while the shaft-hole in the Shah Tepé hammer is at the end. The denting underneath at the end is also found in the Tepé Hissar mould. Clay crucibles of a more finished kind are found for instance in Thermi, towns I, III and V.⁴

¹ M. HOERNES, *Urgeschichte der bildenden Kunst in Europa*, p. 489.

² G. CHILDE, *The Danube in Prehistory*, fig. 200 (Alpenquai, Zürich).

³ E. SCHMIDT, *Op. cit.*, pp. 185 and 308, Pl. XLIV, H 3577.

⁴ W. LAMB. *Excavations at Thermi*, Pl. XXIV, bottom of p. 157.

The find of moulds for axe-heads in layer III indicates that it was only due to chance that such weapons were not found in the course of the excavations. The early occurrence is also noteworthy.

b) *Rattles.*

A couple of hollow rattles have the form of a round body with short handles, in one case broken off (454 D III4, +1.20 m.).

Inside these objects there is a little, loose, rattling stone. The diameter of the broken rattle is 4.3 cm., and of the intact one (no. 1765 H II7, +5.00 m.) 4.3 cm. The entire length of the latter (Fig. 542 a, Pl. LXIX, Fig. 542) is 8 cm. It is provided with small perforated holes.¹ It is possible, that a fragmentary clay object, decorated with vertical zig-zag lines, also belongs to a rattle (no. 480 C II).

I know of no such clay rattles from other parts of Iran, but rattles were found in India »Round pottery rattles with small pellets of clay inside are well known at Mohenjo daro». »The rattles found vary in size from 1.5 inches to 2.6 inches in diameter, and are all made of light-red ware. Some are plain and others decorated with thick lines always of red and arranged laterally or vertically». ² The handle and the perforated holes are missing.

c) *Pyramids.*

Two small hollow pyramid-like bottles (?) were found in the higher layers, namely no. 46 A II5, +4.75 m and no. 1042 H I. (Fig. 543). The former is black in colour and measures 6.45 cm. in height. The sides of the base measure 2.55 × 2.50 cm. On the sides there are vertically engraved zig-zag lines. The latter pyramid is coloured alternately black and red and is 5.5 cm. in height. On top the pyramid has a short, cylindrical neck (Pl. LXIX, Fig. 543 b).

d) A couple of small clay objects are shaped like a *hammer with handle* (no. 118 A II61 and no. 362 C II; Fig. 544).

e) Four massive *horn-shaped clay objects* (no. 374 C II59, no. 357 A III as well as two unnumbered items) with lengths of 2.65, 4.55, 6.5 and 8.4 cm. respectively were probably handles to clay vessels from which they have evidently been broken off. (Pl. LXIX, Fig. 545 a) Quite different is a black *clay horn* (no. 1179 G II), with an original length of about 10 cm (Fig. 545). It is hollow, and the »base» is covered with a round disc 3.3 cm. in breadth. This latter is provided with a round hole in the middle, 1 cm. in diameter, which opens into the more spacious hollow in the horn itself. In the edges of the disc are two diagonally perforated string-holes opposite each other. The horn reminds one of an old-fashioned powder-horn. It could be hung up, and it certainly contained some liquid or a powder. A fragmentary light gray horn of the same kind was discovered in the grave F III s³. It has a concave groove immediately under the disc. Another is represented in Pl. LXIX, Fig. 545 b.

² T. J. ARNE, Klappern und Schellen aus Luristan, Pl. V, 1 (Serta Hoffilleriana, Zagreb 1940).

¹ J. MARSHALL and others, Op. cit. II, p. 251. III. Pl. CLIII, 11.

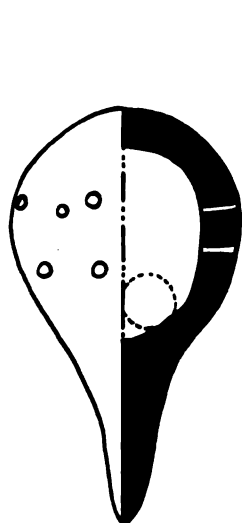


Fig. 542

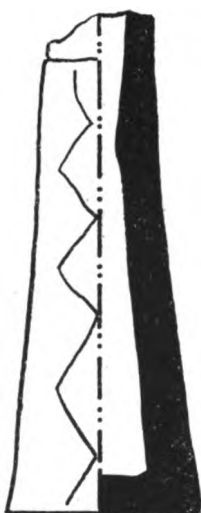


Fig. 543

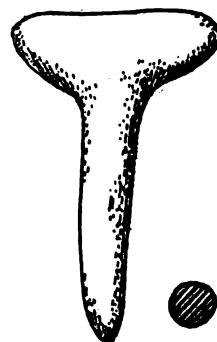


Fig. 544

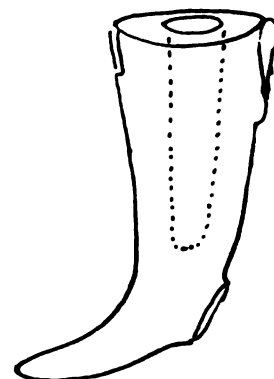


Fig. 545

Two other small *clay horns*, one of them from C II, are of similar shape, with a hole in the middle of the covering disc but without stringholes. They have belonged to biconical vases of the same form as no. 663 E II s¹ and are now broken off. Length: 4.7—5 cm.

f) A couple of *foot-like clay fragments* probably belonged to clay vessels (no. 781 B II and no. 1438 F III). The first fragment is 4 cm. in length, the second 7.1 cm. in length. (Pl. LXX, Fig. 546). No whole clay vessels with such feet are known from the prehistoric layer of Shah Tepé. Certain *handles* look like straight projecting spikes and are coloured brown, black and grey. They are 5, 6.8 and 9.7 cm. in length respectively. The longest, grey handle, found in A II, is ornamented at the base with 7 rows of pricked-in dots. (Pl. LXX, Fig. 547). Furthermore, there are two such handles of well-burnt red earthenware, covered with red «slip» and painted with black bands, partly transverse and partly vertical. The respective lengths of these handles are 8 and 5 cm. (Pl. LXX, Fig. 548 a, b).

g) It is uncertain whether a couple of small clay objects were used as ornaments or were put to some more practical use. One of them resembles a perforated *bobbin* (no. 1500 G III; Pl. LXX, Fig. 549) and the other a *dumbbell* perforated in the middle (1085 F II; Pl. LXX, Fig. 550). Their respective lengths are 2.3 and 6.5 cm.

h) A little *spindle-whorl*(?) in the form of a planorbis shell was found in layer C III (no. 1177). The diameter is 3 cm. A similar object, «a cake mould» has been found in Mohenjo-daro.¹

¹ MARSHALL and others, Op. cit. Pl. CXXXIII, 7—8.

SLING-BULLETS OF CLAY

Numerous so-called sling-stones or sling-bullets of burnt, heavy clay were found in Shah Tepé. These are of two kinds: 1) Long, biconical or egg-shaped with pointed ends (Pl. LXX, Fig. 551). 2) Round, ball-shaped (Pl. LXX, Fig. 552). About 90 of the slingstones belong to the first group, while close upon 200 are included in the other group. The biconical sling-stones are characteristic of the older layer, stratum III. Out of 90, only about 20, belong to stratum II (shafts A II, B II, C II, D II, E II, F II). With but few exceptions, the round sling-stones are characteristic of the younger layer, stratum II. A few sling-stones from layer III are intermediate between the egg-shaped and round forms. The colour varies between blackish grey, grey, reddish grey, red and light-grey. The biconical sling-stones generally vary in length between 4 and 5 cm., but are in some cases no longer than 2.95 cm. or as long as 5.65 cm. The diameter of the round sling-stones varies as a rule between 1.65 and 3.5 cm., but is in some cases nearly 4.5 cm.

The sling-stones were often found isolated, but sometimes in heaps, as was for instance the case with a collection of 28 round stones that lay all together at +3.80 m. (C II 101 no. 440).

In C II were found a further 38+75 sling-stones, with the exception of one, all round (C II no. 441 and C II no. 509).

In G II lay 13 round sling-stones (G II no. 895).

In A III lay altogether 11 biconical sling-stones, down to -0.70 m.; in B III lay 15; in C III were 4; in D III 2; in E III 6; in F III 10+3 doubtful ones; in G III 9, one of which was almost pear-shaped. Round sling-stones occurred, besides in C II and G II, also in A II, E II and F II, though in all scarcely amounting to 10.

A longitudinally cleft egg-shaped sling-stone shows on the convex surface a transverse groove (B II no. 849), reminding one of so-called bobbins of clay, found for example in Tepé Gawra.

Dr. R STARR, who found many such biconoid unbaked clay pellets in Nuzi (Mesopotamia) says: »The purpose of these objects is obscure. It has been suggested that they served their illiterate users as counters. With a full realization of the uncertainty of any positive attribution of use, these pellets will be referred to tentatively as counters, in lieu of better name» (R STARR, Nuzi, I, p. 362. II, Pl. 39 AA.)

Such »sling-stones» have a wide area of distribution both in the east and in the west. »Bicones of baked or unbaked clay were found in all substrata of the mound (Tepé Hissar) from the beginning to the end of the occupation».¹ The same kind of sling-stones were common in Tureng Tepé,² and on dwellingsites on the

¹ E. SCHMIDT, Excavations at Tepé Hissar, p. 53.

² WULSIN, Excavations p. 11.

plain near Persepolis,¹ in Tepé Sialk (northern, older mound),² in Susa,³ in Anau II and III (both egg-shaped and round)⁴ and in Mohenjo-Daro, India (both the oval and the round types). In his chapter on the subject MACKAY says: »The sling probably originated in a stony country, where ammunition would be plentiful. When its use extended to alluvial countries, the pellets would naturally have been of pottery». ⁵ If we go farther west we find sling-stones of clay in Sumer,⁶ in Samarra,⁷ in Nineveh, III and IV,⁸ in Tepé Gawra⁹ at Kadiköy on the Bosphorus (both round and egg-shaped as well as spool-shaped),¹⁰ in Thessaly (Rakhmani, Sesklo, Dimini, Tsangli, Tsani and other places, between 400 and 500 »sling-bullets of terracotta»),¹¹ in Bulgaria¹² (Veselinovo in the Jambol-district).

CLAY WHEELS

The clay wheels are massive, round discs, with a strongly marked elevation on either side of the axle-hole. This elevation represents the hub. The small clay wheels were possibly used as spindle-whorls, but the larger ones probably belonged to toy carts or clay waggons. (Pl. LXX, Fig. 553 and Pl. LXXI, Fig. 554).

20 such clay wheels were found in Shah Tepé, of which number five came from stratum III (F III without number, and no. 1379, C III no. 643, B III no. 931 and E III no. 1671) while the others came from stratum II (A II35 no. 73 [without hole], A II nos. 702 (Pl. LXX Fig. 553), 703, B II no. 735, C II nos. 488, 489, 658, 961+974, D II 5 no. 378, E II nos. 992, 1545, F II no. 1286, G II nos. 1005 (Pl. LXXI, Fig. 554), 1188, G II no. 1371). Ten of the wheels are to be found in the Teheran Museum and ten in the National Historical Museum in Stockholm.

The colour of the burnt clay varies between yellowish brown and reddish violet. Almost half of the wheels are undamaged; the others are fragmentary, most of them having a damaged hub. In one case the hub is without hole and consists

¹ E. HERZFELD, *Steinzeitlicher Hügel bei Persepolis* (Iranische Denkmäler II, 1. Tafel XXVIII, p. 17).

² GHIRSHMAN, *Fouilles de Sialk I*, p. 24 and 33, Pl. LII, 35, 36.

³ DÉLÉGATION en Perse, XX. p. 108, Fig. 9, 11.

⁴ H. SCHMIDT, *Archaeological Excavations in Anau and Old Merv*, Pl. 43, 6; p. 165 and 172.

⁵ J. MARSHALL, *Mohenjo-Daro etc.*, Vol. II, p. 466; Vol. III, Pl. CXXX, 4, 5.

⁶ MACKAY, *A Sumerian Palace*, II, Pl. XLIV, Fig. 3. V. CHRISTIAN, *Altertumskunde* p. 111 (Ur).

⁷ HERZFELD, *Die vorgeschichtlichen Töpfereien von Samarra*, 1930.

⁸ C. THOMPSON & M. E. L. MALLOWAN, *Excavations at Nineveh 1931—32* (Liverpool Annals of Archaeol. and Anthropology XX, 1933, Pl. LXX, 11, 12, 14).

⁹ E. A. SPEISER, *Excavations at Tepé Gawra I*, p. 80 (»The Gawra levels . . . especially the lower ones, produced a very large number of sling pellets of clay. They are almost invariably ovoid, average 55 mm. in length and 28 mm. in diameter, and are made of dark brown clay, poorly fired.»)

¹⁰ T. J. ARNE, *Den äldsta bebyggelsen vid Bosporen*, Figs. 66, 69. (Fornvännen 1922).

¹¹ WACE-THOMPSON, *Prehistoric Thessaly*.

¹² IZVESTIJA BULGARSK. ARCH. INSTITUTA 1939. MIKOV, *Seliščna mogila ot bronzovata epocha doc. Veselinovo S. 220. Fig. 268. M. MIKOV thinks the slingbolts belong to the oldest period of the bronze age (after 1800 B. C.)*

of carelessly applied clay (A II35, no. 73). The greatest diameter is 10.4 cm., with a thickness over the hub of 5.45 cm. (G II no. 1005). Another hub measures 6.2 cm. in thickness (F II no. 1286). The smallest wheel measures 2.75 cm. in diameter and 1.55 cm. in thickness over the hub (C III no. 643). The wheel C II no. 961 + 974 (in two pieces) is the next biggest and measures 8.9 cm. in diameter.

It would appear that such wheels were not found in Tepé Hissar or in Tureng Tepé. Nor are they mentioned from the »stone-age mound» near Persepolis. Among the sacrificial gifts in the Shushinak temple in Susa is a wheel-like disc of yellow clay, 9.5 cm. in diameter, which is considered by DE MECQUENEM to be a spindle-whorl.¹ Whether the »hub» projects on both sides is not mentioned. In Tepé Sialk's northern mound wheel-like spindle-whorls have been found, with diameters of little more than 3 cm.² Such wheels and also clay waggon are of fairly frequent occurrence in North Mesopotamia. Stratum VIII in Tepé Gawra had 14 specimens, stratum VII 22 specimens and stratum VI 63 specimens,³ thus showing a steady increase from Jemdet Nasr time to early dynastic time. A couple of the wheels reproduced on the plates (SPEISER, Tepé Gawra) have diameters of 5.6 and 8.1 cm. respectively, but there was one measuring 12 cm., with a hub-thickness of 6.8 cm.

A little wheel, being a clay reproduction of a waggon-wheel of wood comprising three parts, with hub, was found in Tell Chagar Bazar in north-west Mesopotamia, and from Gasur (Nuzi) east of the Tigris we have a model waggon of clay.⁴ Another clay wheel from Tell Chagar has six painted spokes.

Clay wheels have also been found in Kish in southern Mesopotamia. Such wheels are also known from Asia Minor, e. g. from Alaca Höyük.⁵

In the layers belonging to terrace B in the south Kurgan of Anau were found clay wheels of various shape: some more flat and disc-like, others with strongly developed hub-part.⁶ Here was also found an oblong clay waggon-box. Toy wheels of clay are of common occurrence in the prehistoric layers in Mohenjo-Daro and Harappa,⁷ where also carts of clay have been found. In his work on Mohenjo Daro, after giving an account of various finds, E. MACKAY says: »As far, therefore, as the archaeological evidence takes us at present, the wheeled vehicle originated in Central Asia, and seems to have passed thence to the west about a millennium later.» He supposes that the discovery was made in Mesopotamia.

¹ DÉLÉGATION EN PERSE VII, p. 118, Fig. 407.

² R. GHIRSHMAN, Fouilles de Sialk I, Pl. LII, 9.

³ E. A. SPEISER, Excavations at Tepé Gawra, pp. 75 et seq., Pl. LXXVIII, 6, 8.

⁴ V. CHRISTIAN, Altertumskunde des Zweistromlandes, Bd. I, Tafeln, T. 391, 9, 10. R. STARR, Nuzi, II, Pl. 99, E. J. C. D. I. p. 415.

M. E. L. MALLOWAN, The Excavations at Tall Chagar Bazar, p. 21, Figs. 6, 8, 17, 19. (Iraq III, 1, 1936).

⁵ H. Z. KOŞAY, Alaca Höyük Hafriyatı, 1936, p. 33, L LIII, A1 a 52.

⁶ H. SCHMIDT, The Archaeological Excavations in Anau, p. 172, Pl. 47, 9 and Fig. 418.

⁷ J. MARSHALL and others, Mohenjo-Daro and the Indus Civilization II, p. 554. Pl. CLIII, 34—37. Pl. CXXXI, 38.

DISCS OF CLAY POTSDHERDS WITHOUT PERFORATION (GAMESMEN)

In Shah Tepé were found about 30 round though rather irregularly shaped burnt clay discs without perforation. (Pl. XXXVII, Figs. 555 and 556). These have been made from fragments of clay vessels, and have therefore as a rule a slightly convex and a slightly concave side. About 75% of the discs have been fashioned from red or red black-painted vessels (11 of the latter), and must thus be ascribed to the earliest period. Of the 15 deriving definitely from certain layers only 8 were found in layer III, while 7 may be ascribed to layer II, though probably deriving from the transition-zone from this layer to layer III.

The largest disc measures 7.5 × 8 cm. in diameter and 1.2 cm. in thickness; the smallest measures 3.3 × 3.2 cm. in diameter and 0.6 cm. in thickness. Both have been made from clay vessels without red »slip», the smaller one of grey earthenware, the large one of brownish earthenware. A small disc measuring 3.4 × 3.5 cm. in diameter (found in C II) is made of coarse earthenware mixed with gravel. Some of the discs (no. 1285 F II, B III4 and no. 1575 F III) have more or less smoothed edges. In most cases the edges have been only roughly chipped into an approximately round form. The commonest diameter is 5—6 cm., with a thickness of a bare centimeter.

For what purpose have these discs been used? It is conceivable that they were intended to be transformed by means of a perforation in the middle into spindle-whorls, especially those with smoothed edges. They may also have been used in the making of clay vessels, either for polishing the vessels or as isolating-stands during burning. Another possibility is that they were used as gamesmen.

In Tsangli in Thessaly have been found several such discs.¹ E. SCHMIDT remarks that »re-ground potsherds also occurred as discs, solid or perforated.²

This applies to Tepé Hissar II and III. The laterally perforated discs are, however, absent in Shah Tepé. Also from the »stone-age» settlement near Persepolis clay discs are known, both with and without perforation.³

From Susa we have clay discs chipped into shape from painted vasesherds, laterally perforated or perforated in the middle as spindlewhorls.⁴

According to MALLOWAN⁵ there were found in Tepé Gawra »simple discs varying in size» described as »clay gaming pieces».

¹ WACE & THOMPSON, *Prehistoric Thessaly*, p. 113. »Also in V and VI and occasionally in VII, we found many sherds of coarse pots chipped round into rough discs, probably for a game. The discs are of various sizes and some of them are painted.»

² E. SCHMIDT, *Excavations at Tepé Hissar*, pp. 117 and 185, Pl. XLIV H. 3127.

³ E. HERZFELD, *Op. cit.*, p. 17, fig. 19, Pl. XXIX »Kleine runde Tonscheiben, gebrannt, bemalt oder unbemalt, ad hoc angefertigt, und nicht durchbohrt, können wohl als Spielsteine angesprochen werden. Einige der perlenartigen Dinge gehen über in oder sind schon Spinnwirtel, von geläufigen und langlebigen Formen.»

⁴ J. DE MORGAN, *La préhistoire orientale* III, fig. 76.

⁵ MALLOWAN, *Op. cit.*, p. 82.

W. LAMB mentions »discs» from Kusura near Afyon Karahissar.¹ »In period A, discs are sometimes doubly pierced or cut into odd shapes». From Shah Tepé we have such a well burnt flat clay disc (no. 868 F II) with the beginnings of two holes. The usual flat discs without hole seem, however, to be absent or at least rare in Kusura. In Thermi on Lesbos have been found clay discs with perforation in the middle that are regarded as spindle-whorls.² In Troy were found over 300 chipped round potsherds with perforation in the middle that are regarded as spindle-whorls, whereas nonperforated sherds of this kind were very rare.³

In general the non-perforated clay discs have been regarded as toys or gamesmen; and as we have seen above, they have occurred from Iran to the Balkan Peninsula. But their area of distribution, both in the east and in the west seems to have been still more extensive. In the chapter on »gamesmen or amulets» in the work on Mohenjo-daro⁴ we read: »The poorer people used gamesmen made of pieces of potsherd roughly rubbed into a suitable shape. The board on which these pieces were used was probably roughly marked on the ground, either in the form of square or small holes scooped out in the dust». As to the shape of these gamesmen, however, nothing definite is said. On the other hand, round discs made from potsherds and with or without perforation in the middle are not, according to A. GÖRZE,⁵ uncommon in Middle and South Europe. They have been found from Portugal to Troas, they belong to the civilization of the neolithic spiral-maeander ware and are common in the fortification-walls of the Danube region from Hallstatt time, in the Lausitz culture and later in the Gallic oppida. The perforated discs »können als Spinnwirtel gedient haben, was freilich bei denjenigen Stücken, deren Loch exzentrisch liegt, unwahrscheinlich ist. Die Rundscherben können als Spielzeug für Wurfspiele benutzt worden sein. Vielleicht waren es auch Schleudergeschosse.»

SPINDLE-WHORLS

a) *Perforated discs of potsherds.*

Spindle-whorls made from potsherds and *with* medial hole are very rare in Shah Tepé. This is an indication that the ordinary and frequently occurring whorls *without* holes were not intended to be pierced and used as spindle-whorls. Of course the perforated whorls may have been used for other purposes, especially if the medial hole is very narrow. I know of only three specimens with completed

¹ W. LAMB, Excavations at Kusura near Afyon Karahissar, p. 34, fig. 23, 6 (Archaeologia LXXXVI).

² W. LAMB, Excavations at Thermi, p. 162, fig. 47, 30.

³ H. SCHMIDT, Op. cit., p. 223.

⁴ MARSHALL and others, Op. cit. II pp. 557—559.

⁵ EBERTS Reallexikon XII, Spiel und Spielzeug (A. GÖRZE).

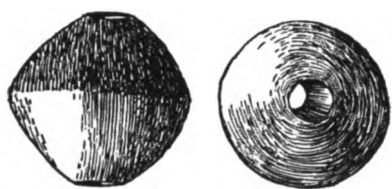


Fig. 560 a

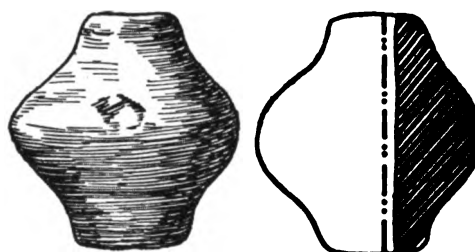


Fig. 560 b

perforation, and one in which the perforation has been begun. (Pl. LXXI, Fig. 557). One spindle-whorl has been made from a red and black-painted sherd (E III no. 1673) and measures 6.1 cm. in diameter and 1 cm. in thickness. Two others (C II no. 290 (Pl. LXXI, Fig. 558) and one specimen without number) have been made from black earthenware. One of these has a diameter of 7.2×6.5 cm., the other measures 6.4×6.6 cm. in diameter and 0.7 cm. in thickness.

The whorl with the beginnings of a perforation on each side has been made from a black and red-painted sherd. The diameter is 8 cm. and the thickness about 1 cm. This is the same sort of double-sided perforation that has been used in the case of the other sherds.

b) *Spindle-whorls of burnt clay, generally biconical or plane-convex.*

About 35 spindle-whorls of burnt clay, originally shaped as such, and not cut out of the sherds of clay vessels, have been found. Of these, one (no. 885 E II; (Pl. LXXI, Fig. 559) reminds one of the clay wheels that are mentioned in another place in the present work, and some are so small (with a diameter of at most 2—3 cm.) that they are perhaps rather to be regarded as clay beads (Fig. 560 a, b). The form is generally biconical, sometimes with a sharp belly-edge, though most commonly more rounded. At least 4 spindle-whorls have a plane under-surface and an upper part in the shape of a truncated cone. (Pl. LXXI, Fig. 561). The colour varies — it may be grey, red, brown, brown-yellow or black. The diameters amounts generally to between 3 and 4 cm., seldom more (e. g. no. 300 B II₄₃ = 4.65 cm. in diameter and 2.3 cm. in height (Pl. LXXI, Fig. 562); no. 1280 F II = 4.25×1.8 cm). The height over the medial hole varies between 1.6 cm. and 2.8 cm. There is no ornamentation.

Approximately $\frac{1}{4}$ of these spindle-whorls (7) were discovered in the lowest layer (III), the rest, with a few exceptions, in layer II.

c) *Spindle-whorls of stone.*

At least 17 spindle-whorls were made of stone. It is, however, a question as to whether several were not used as beads. Six were of alabaster or limestone, (Pl. LXXI, Fig. 563 a, b) one of slate, three of reddish stone. (Pl. LXXI, Fig. 564). Only two were found in the lowest layer (III), namely no. 1463 F III (flat, discshaped, 5.4×5.95 cm). and no. 1683 E III (slate, $4.6 \times 4.3 \times 0.9$ cm.). Three

belonged to grave inventories in C II s² (no. 274; (Fig. 109), F II s¹ (no. 754) and E II s³ (no. 621); the first and last-mentioned of these may possibly have been used as beads. Some are biconical, others flat.

Three spindle-whorls of brown, black and white stone respectively lay in E I and H I, and the form of these spindle-whorls has been so little changed that it is not out of the question that they were actually used in Islamic time as well as some spindle-whorls of bone and glass that were found high up.

Regarding the finds of spindle-whorls from Tepé Hissar, E. SCHMIDT¹ says: »Only a few whorl shapes (of clay) occurred in Hissar I. The most frequent shapes are biconoid or biconvex»; »A smooth, light greyish brown stone ring may have been used as a spindle-whorl.» In Hissar II conoid and biconoid forms were also found. »Conoid, biconoid and biconvex whorls occur in stratum III as well as in the preceding layers.» Some wheel-shaped whorls have such small medial holes that they may possibly have been used as wheels on toy waggons. A few isolated biconvex and plane-convex spindle-whorls of stone were also found in strata II and III. In the prehistoric village near Persepolis² were found biconvex spindle-whorls of clay and turquoise. Tepé Sialk has, even during its oldest period, and afterwards in all layers, spindle-whorls of clay, sometimes lens-shaped and occasionally made from a painted sherd from a clay vessel.³

The wheel-shaped whorls are rare. In layer II one finds tall, conical, sometimes black and red-painted specimens. No spindle-whorls from Tepé Giyan are mentioned, but from Susa numerous both flat, planeconvex and wheel-shaped whorls are known.⁴

In Tepé Moussian painted, generally conical spindle-whorls of clay have been found as well as the usual non-ornamented ones. Occasionally, whorls with notched or cut out edges have been found.⁵

In the »tells» of Iraq spindle-whorls are common, and bear witness to extensive practice of the textile art. In layers VI—VIII in Tepé Gawra about 400 such whorls of clay were found, generally biconvex or with even base and conical top.⁶ The diameter varies from 2.4 to 4.5 cm. Many are ornamented with simple geometric patterns, pricked in points, lines and incisions in the periphery. From Jamdet Nasr and Nineveh numerous conical and biconical or plane-convex spindle-whorls of clay, steatite and limestone are known, the majority without ornament.⁷ Plane-

¹ E. SCHMIDT, *Op. cit.*, p. 53, Pl. XIV; p. 58, Pl. XVIII; p. 117, Pl. XXVII; p. 185, Pl. XLIV; p. 221, Pl. LXIII.

² HERZFELD, *Op. cit.*, Pl. XXIX.

³ R. GHIRSHMAN, *Op. cit.*, pp. 23, 33, Pl. LII.

⁴ O. MONTELIUS, *Die älteren Kulturperioden II*, figs. 675—677.

⁵ DÉLÉGATION EN PERSE. Tome VIII, fig. 117.

⁶ SPEISER, *Excavations at Tepe Gawra*, p. 78, Pl. XXXVII and LXXXVIII, 9—14.

⁷ V. CHRISTIAN, *Op. cit.*, p. 158, Pl. 125, 3; p. 165, Pl. 144, 3—5.

R. C. THOMPSON and M. E. L. MALLOWAN, *The Brit. Museum Excavations at Nineveh 1931—32*, p. 144, Pl. LXIX (*Liverpool Annals of Arch. and Anthropol.* XX 1933).

convex and conical spindle-whorls of copper, clay, stone, bone, mussel-shells and faience are known from Kish¹ and belong to a rather older period than Jamdet Nasr. In Anatolia numerous spindlewhorls of clay and stone have been found, e. g. in Alişar, Ahlatlibel, Kusura, Troy, Thermi. These spindle-whorls are ornamented to a much greater extent than those found in more easterly sites; and they have been very carefully classified in the catalogue of the Troy finds,² where they belonged to the 2nd to the 5th towns.

Also in the youngest stone-age of Europe spindle-whorls have been found in many settlements, though not within the North European cultural circle.³ On Crete (e. g. the palace in Knossos) the oldest belong to the »middle neolithic«. »The clay spindle-whorls, which occur in great abundance, are either plain or merely distinguished by lines or notches. None of the more elaborately decorated class characteristic of the early strata of Hissarlik are found here. The Hissarlik finds, indeed, are of distinctly later date.« (A. EVANS, Palace of Minos I, p. 42, Fig. 10, 5—10). Spindle-whorls of clay are found in large numbers in settlements and in lake-dwellings from the early bronze-age (incised ornamentation on spindle-whorls from Camp de Chassey, Saône-et-Loire. Some show on one side a concavity around the shaft-hole resembling that known from Anau spindle-whorls).⁴ Not until after the birth of Christ did the spindle-whorl (and the spindle) enter into use in Scandinavia, though textiles had at the time of their introduction already been being manufactured for many centuries.

It we turn eastwards we find the spindle-whorl both in Anau's various epochs ever since »Culture I« and in India.⁵ MENGHIN regards the spindle-whorls that were discovered in Anau I as the oldest known. S. CORBIAU finds »exact similitudes between the Sari-Dheri finds and the Knossos and Jamdet Nasr spindle-whorls on the one hand and the Anau III spindle-whorls on the other.« Simple geometric ornamentation, sometimes with white incrustation such as is found on the Anatolian spindle-whorls, is not infrequent. Spindle-whorls from Shah Tepé are thus of simpler design than those we know both to the east and the west in Turkestan and Anatolia.

STONE OBJECTS

a) *Celts*.

It is striking how small a part stone, with the exception of flint, plays in Shah Tepé as a material for weapons and cutting instruments. Only a single *celt* of blackish grey, fine-grained stone was found in the course of the excavations,

¹ V. CHRISTIAN, Op. cit., p. 202, 8—12.

² H. SCHMIDT, H. Schliemanns Sammlung etc. K. BITTEL, Op. cit. p. 81.

³ O. MENGHIN, Weltgeschichte der Steinzeit, passim and index. p. 643.

⁴ DÉCHELETTE, Manuel d'archéologie, I, p. 581, fig. 224.

⁵ H. SCHMIDT, Archeol. excav. in Anau, pp. 163, 166. S. CORBIAU, Op. cit., fig. 3, 11—19.

though this does not of course exclude the possibility that larger numbers of such objects might have been found elsewhere in the mound. The celt is a kind of rectangular, wellpolished chisel or adze, almost rectangular in crosssection. It measures 5.45 cm. in length and 3.5 cm. in breadth (G II no. 1180). One of the broad sides is almost flat, the other somewhat curved. (Fig. 565).

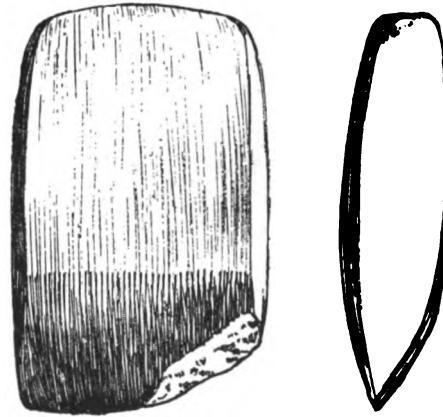


Fig. 565

Concerning Tepé Hissar E. SCHMIDT says:¹

»In Stratum I the celts are rare as compared with the later strata.» In Hissar II the broad rectangular type is the most frequent.» In

Stratum III more celts were found than in the two preceding layers, but this may be due to the fact that a greater area of Hissar III was examined.»

More primitive axes and mattocks of slate and other kinds of stone were found in Tepé Sialk I and II.² They are in part chipped, in part polished, and frequently fairly large (more than 20 cm. in length). There is no mention of stone celts from Tepé Giyan and Persepolis. They are, however, known from Susa, as well those of a more triangular shape as also trapezoidal and rectangular ones.³

Many sites in Iraq, such as Obeid, Arpachiyah, Jemdet Nasr, Tepé Gawra⁴, Tell Chagar Bazar,⁵ can show stone-celts from the copper age ever since the Tell Halaf stage and right down into historic time.

In northern Syria stone chisels are common.⁶ They occur in many sites in Anatolia, such as Alişar,⁷ Alaca Höyük,⁸ Kusura,⁹ Thermi,¹⁰ Troy,¹¹ Kadiköy.¹² Chisels of very varying material and in different sizes occur. They are for the most part small, and may often be regarded as merely a kind of blade or cutting edge set in the short end of a bent wooden arm.

The same sort of types are also known from the Balkan Peninsula, for instance in Thessaly, and from the upper part of the Danube region,¹³ indeed, even from Sweden (Uppland, Östergötland, Gotland).¹⁴ The chisels from the Balkan Peninsula,

¹ E. SCHMIDT, *Excavations at Tepé Hissar*, p. 58, Pl. XVII, H 2909, p. 121, Pl. XXXI, H 2657, o. 220.

² GHIRSHMAN, *Fouilles de Sialk*, I, pp. 22 and 32, Pl. LVI.

³ DE MORGAN, *La préhistoire orientale III*, Figs. 84, 97.

⁴ V. CHRISTIAN, *Altertumskunde* etc. Pl. 44, 7, 8; 134, 11—12; 144, 13—15; 320 5—8.

⁵ MALLOWAN, *The Excavations at Tall Chagar Bazar*, p. 22, Fig. 6, 9—15, (Iraq III).

⁶ J. ARNE, *Stenåldersfynd från Nordsyrien*, Figs. 17—26 (Fornvännen 1908).

⁷ K. BITTEL, *Prähist. Forschung in Kleinasien*, p. 76.

⁸ H. Z. KOŞAY, *Alaca Höyük hafriyatı*, I, XLVIII, CVII (Hittite time and copper age).

⁹ W. LAMB, *Excavations at Kusura*, II, p. 260, Fig. 23 (*Archaeologia*, L, XXXVII).

¹⁰ W. LAMB, *Excavations at Thermi in Lesbos*, p. 185, Fig. 55 etc.

¹¹ H. SCHMIDT, *H. Schliemann's Samml.* etc. pp. 271, 272.

¹² T. J. ARNE, *Den äldsta bebyggelsen vid Bosporen*, Fig. 2—21 (Fornvännen 1922).

¹³ O. MENGHIN, *Weltgeschichte der Steinzeit*, Pl. XXXVII, 3, XLIII, 4.

¹⁴ O. MONTELIUS, *Minnen I*, Figs. 135, 138, 188.



Fig. 566



Fig. 567 a



Fig. 568 a

however, generally have blunt or pointed necks, and have both sides curved. The same applies to most of the chisels from Anatolia.

In Anau stone chisels seem to be altogether lacking, and the same is the case in Mohenjo-Daro.

b) *Flints.*

Flints were found in large numbers in Shah Tepé, while obsidian was entirely lacking. The flint material was, however, for the most part crudely shaped. The only well chipped object was a little lancet-shaped *flint point* (arrowhead) 5.65 cm. in length (F III23, no. 1667, ± 0.05 m., Fig. 566). Another flint-flake has been sharpened by retouching (F III no. 1395). It is only 5.2 cm. long. One flake is irregularly shaped in the form of an arrowhead and is 4 cm. in length (H II no. 1752), a couple of others have pointed ends (C III no. 919, B II no. 806), and a third is triangular, 3.5×3.3 cm. (G II no. 970). (Fig. 567 a and Pl. LXXI, Fig. 567). Altogether 508 *flint-flakes* were collected. Of these, 229 were found in stratum III, 243 in stratum II and 36 in the topmost stratum I, where they had certainly been thrown up in the course of excavation in the older layer. The distribution in shafts and strata may be seen from the following figures:

A	B	C	D	E	F	G	H		
I = 6	I = 0	I = 14	I = 3	I = 3	I = 4	I = 2	I = 4	= 36	
II = 28	II = 45	II = 52	II = 5	II = 38	II = 28	II = 40	II = 7	= 243	
III = 7	III = 25	III = 22	III = 4	III = 48	III = 110	III = 13	—	= 229	
Total	= 41	= 70	= 88	= 12	= 89	= 142	= 55	= 11	= 508

The flint varies in colour from white to black through greyish white with white

patches, grey, yellow, brown, rose-coloured, lilac and blackish red in different shades and combinations. Some of the flakes are translucent. One glittering black, dentated flint-flake resembles obsidian (H I no. 1135). In some cases a part of the chalk crust has been left sticking to the flake. Some of the flint-flakes have a *scraping edge* with retouching at the short end, some concave, some convex. Retouchings also occur in a number of cases along the edge of one long side or of both. Such an edge is sometimes slightly *dentated* or *jagged*. One very often finds an edge on one or on both sides has been *worn smooth*. In some cases this smoothness is to be seen on both edges. In a few cases a distinct *dint* may be seen at one short end. (E I no. 519, G II no. 1346). (Fig. 568 a and Pl. LXXI, Fig. 568).

The flint-flakes are generally short, 4—6 cm., but the longest is as much as 10.1 cm. in length and 2.8 cm. in breadth (B II no. 848). Some are as long as between 9 and 10 cm. Of these, a couple are bent in the form of a boat at one end. A real *core*, of which the flake has been knocked off, is A III no. 510, measuring 9.1 cm. in length and 4.9 cm. in thickness. In cross-section the flint-flakes may be triangular or trapezoid, sometimes very broad. About ten whole or half *flint-balls* seem to have been used as *chipping stones* (B II, nos. 850, 851, B III s⁴, without number, F II nos. 870, 1287, F III s³—⁵, without number, F III nos. 1301, 1381, 1574, G II no. 1368). (Pl. LXXII, Fig. 569 a, b). On several of these the in part preserved chalk crust may still be seen. From other specimens small pieces have been knocked off, perhaps to provide support for the fingers. The half flint-ball F III no. 1381 measures 8.2 cm. in diameter. The dimensions of the two chipping stones found in graves F III s³ and B III s⁴ are 6.65 × 6.0 and 6.1 × 4.65 cm.

Of the flint-flakes, B II s⁷ no. 578 and F III s¹⁶ no. 1630 were found in graves.

To what uses have these flint-flakes been put? Some have obviously served as *scrapers*, some possibly as *sawing edges*, but a number that have been worn smooth have presumably been used as *cutting edges*, mounted in *wooden sickle-handles*. Although one is probably justified in assuming that the flint flakes were employed as sickle-blades by an agricultural population, it is likely that they were still more used by these people in their capacity of cattle owners and above all shepherds. A sheep could be slaughtered in different ways, but the hide had to be cut up and the animal flayed; and in this connection the flint flake came in very useful. Similarly, these *flint knives* could be used for cutting up the meat and freeing it from the bones after it had been cooked. Bone utensils were probably also manufactured with the help of these flint knives.

Hundreds of flint implements of the same kind as those in Shah Tepé were found in the settlement on the plain outside Persepolis.¹

¹ E. HERZFELD, *Steinzeitlicher Hügel bei Persepolis (Iranische Denkmäler 2, 1, pp. 15—17, Pl. XXIV and XXV.*

Regarding *flint-flakes and cores* from Tepé Hissar, E. SCHMIDT¹ says: »These objects occur in all strata of Tepé Hissar. In Hissar I they may be somewhat more frequent, but their forms do not give any chronological clues. There are flakes with triangular and trapezoid cross-section. One or both edges are re-touched and polished by use. No obsidian.»

Flint scrapers and perforators »are present in alla strata of the mound, although they are much rarer than the flakes.» Only two specimens that may be classed as *arrowheads* were found in stratum I, one very similar to ours, none in stratum II, while hundreds occurred in stratum III. The Hissar III B arrowheads are mostly oval, both ends being pointed.

Also in the two mounds of Tepé Sialk there are plenty of flint-flakes, that have been used as knives, saws, awls and scrapers. The two last-mentioned categories, that were of rare occurrence during the two older periods, became commoner during the subsequent period. During the last, fourth, period the flints were of rarer occurrence in the southern mound of Tepé Sialk, but some flakes were more than 14 cm. in length.² Obsidian was extremely rare.

The same kinds of flint-flakes with triangular or trapezoid cross-section occur in Tepé Giyan. They seem to have been used as knives, scrapers and saws. There are no pointed blades. No axes, spear-heads or arrowheads of flint have been found here.³

During the copper age flint was much in use in *Susa* and in the tepés on the Moussian plain.⁴

Large numbers of cores have been found, sometimes used as chipping-stones, also awls, scrapers, seldom chisels, and finally, knives and saws. Of particular interest are the well chipped arrowheads of flint. These are lancet-shaped, rhomboidal and — very rarely — triangular, provided with barbs and tangs. Obsidian blades are of fairly frequent occurrence. In *Susa* J. DE MORGAN also found flint blades set in bitumen that had served as a handle or as 'cement' in a wooden handle.⁵

Regarding Anau in West Turkestan, H. SCHMIDT⁶ says: »Worked flint implements occur in all layers of the north Kurgan and are especially abundant in the middle and lower strata. For the most part they are flakes of flint which were worked and used as knives or long scrapers. In the south Kurgan also, flint implements were often found in the middle strata.» Here, too, were found beautiful arrowheads of flint with barbs and tang, worked on both sides, or also lancet-shaped ones with rounded base. Only one arrowhead of obsidian was found in a skeleton-grave.

¹ E. SCHMIDT, *Excavations at Tepé Hissar*, pp. 57, 121, 219.

² R. GHIRSHMAN, *Fouilles de Sialk I*, pp. 22, 32, 55 and 65, Pl. LV and XCVI.

³ CONTENAU & GHIRSHMAN, *Fouilles du Tepé Giyan*, p. 54.

⁴ J. DE MORGAN, *La préhistoire orientale III*, pp. 63—72. Figs. 87—90, 92—96, p. 94, Figs. 136, 137.

⁵ J. DE MORGAN, *ibidem*, Fig. 109.

⁶ H. SCHMIDT, *The Archaeological Excavations in Anau*, pp. 164, 167.

A large number of flint-flakes were also found in Mohenjo-Daro, the oldest layers of which have not been investigated.¹ »The flint implements found at Mohenjo-Daro are of the simplest description, most of them being long flakes. — — — No specimens of the short flakes, both notched and unnotched, that are so common in the early periods of Babylonia, have been found at Mohenjo-Daro, nor any traces of pottery sickles; and it is evident that flint was not used in the manufacture of sickles as it was in both Sumer and Elam.» Three flint implements of rectangular shape and very roughly flaked may have been used for agricultural purposes.

Flint was used in Mesopotamia in the same way as in Iran. In the oldest layers of »the Y-area» in Kish² in Babylonia have been found flint-flakes for sickles, borers, scrapers and knives from the oldest Lagash time, and early finds of the same kind are known from Arpachiyah,³ Tall Chagar Bazar⁴ and Tepé Gawra.⁵

In the last-mentioned tepé large numbers of both flint and obsidian objects were found, chiefly »blades, arrowheads, scrapers» and some »drills and cores». The arrowheads, which are for the most part »leaf-shaped or with broad convex base», are well chipped. The flints are more numerous and better worked in the deeper layers (VII—VIII). Tell Halaf, the older layers of which are much earlier than Tepé Gawra VIII, can show knives, scrapers and arrowheads of flint and obsidian,⁶ as can also the rather younger Nineveh 3 (Uruk time).⁷

Imported flint was used, even if not to any great extent, also in southern Mesopotamia, for instance in Ur,⁸ where small blades and borers have been found.

In Anatolia no purely neolithic sites have been found⁹, but flint-flakes in a more or less worked up state have been found during the copper age and later. Blades, scrapers, borers and cores of flint and obsidian were found in the bottom layer of Yobbahüyük near Sakceğözü in East Anatolia,¹⁰ blades and small scrapers

¹ J. MARSHALL, Mohenjo-Daro and the Indus Civilization, Vol. II, p. 458; III, Pl. CXXXI, 1—19.

² V. CHRISTIAN, *Altertumskunde des Zweistromlandes I*, Text, p. 201.

³ MALLOWAN & CRUIKSHANK ROSE, Excavations at Tall Arpachiyah, Fig. 52, 13—25 (Iraq, II, I, 1933). »Many thousands of both flint and obsidian knives and scrapers were found on the site.» The large majority are plain, faceted flakes; there are also borers with a sharp point.

⁴ MALLOWAN, The Excavations at Tall Chagar Bazar, p. 22, Fig. 6 (Iraq, Vol. III, 1). »The normal types of chalcolithic scrapers, both with and without serrated edges, in flint and in obsidian were common in all the prehistoric levels, and survived on into historic times. These instruments, which are common on nearly every early site in Assyria, were undoubtedly often used as sickle-blades, and there are often traces of bitumen, which served to attach them to wooden handles.» A mattock and a couple of scrapers with retouches have more unusual shapes.

⁵ E. A. SPEISER, Excavations at Tepe Gawra I, p. 84; Pl. XXXVIII, XXXIX b., LXXXI.

⁶ V. CHRISTIAN, *Altertumskunde des Zweistromlandes I*, p. 100.

⁷ V. CHRISTIAN, *Altertumskunde I*, p. 130; Pl. 77, 12—17.

⁸ V. CHRISTIAN, *Altertumskunde*, p. III, Pl. 53, 4, 5.

⁹ K. BITTEL, *Prähist. Forsch. in Kleinasien*, p. 10.

¹⁰ BITTEL, *ibidem*, p. 11.

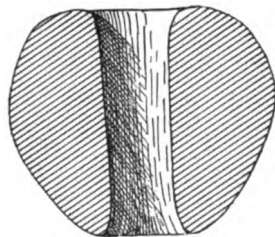


Fig. 572 a

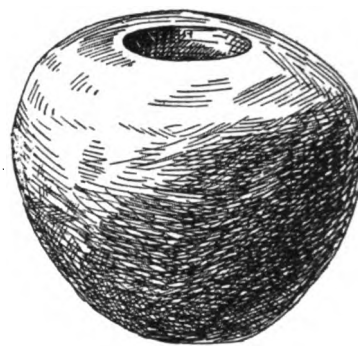


Fig. 572 b

also in Alişar¹ I, in Alaca Höyük,² in Kusura near Afyon Karahissar,³ in Troy,⁴ in Kadiköy⁵ and elsewhere.

The whole of the western Asiatic region shows, as regards flints and obsidian, a simple blade culture without axes, daggers or spear-heads. The generally small axes or celts are made of other kinds of stone. The small, finely chipped arrow-heads show that it was not lack of technical ability that prevented the making of larger flint implements. It is possible that first-class flint material — large cores — was not everywhere available. But the fact that copper appeared as early as it did, so that flint could not compete with it as a material, was probably of equal importance.

c) *Mace-heads.*

Four mace-heads of stone were found, though two were in a state of only semi-preservation.

Of these, one lay in shaft A I at +6.80 m. (A I, I no. 1); but I consider it likely that this is prehistoric. The others were found in stratum II. A I, I no. 1 is an annular mace-head of white limestone with a medial hole pierced from both sides, giving rise to a biconical hole resembling an hour-glass. Diameter 8.7 cm., height 4.6 cm. The greatest diameter of the hole is 2.35 cm. (Pl. LXXII, Fig. 570).

The two halves of mace-heads are of alabaster. The one (B II no. 730) has a diameter of 11.25 cm., a height of 5.4 cm. (Pl. LXXII, Fig. 571). The other (E II no. 737) has a broad pear shape with a diameter of 6.8 cm. and a height of 6.05 cm. The cross-section of the shaft-hole is at the mouth 2.3 to 2.4 cm., inner diameter 1.5 cm. (Fig. 572 a, b).

The most noteworthy was the fourth mace-head (C II100 no. 479). It is of

¹ Bittel, *ibidem*, pp. 13, 76 Pl. XX, 1—4.

² H. Z. Koşay, *Alaca Höyük hafriyatı* 1936, LCVII, p. 137.

³ W. Lamb, *Excavations at Kusura*, Fig. 22 1—5, p. 260. *Archeologia*, LXXXVII. «The majority of our flints belong to the second millenium.»

⁴ Bittel, *ibidem*, p. 47. «(Auffallend ist das völlige Fehlen von Pfeilspitzen aus Silex oder Obsidian in Troja).»

⁵ T. J. Arne, *Fornvännen* 1922.

grey limestone, partly blackened. In shape it is oblong, like the fruit of the poppy, and it is longitudinally pierced. Near the bottom a piece has been knocked off. The ornamentation consists, near the top around the shaft-hole, of 9 pointed ovals in relief and vertically placed (there were probably the same number of ovals near the bottom); and around the middle probably 7 pointed ovals, running horizontally. Height 6.5 cm., diameter 5.7 cm.; diameter of shaft-hole approximately 1 cm. (Fig. 573). The decoration seems to be derived from a metal original.¹

From Tepé Hissar only one pear-shaped mace-head of diorite(?) is known, found in stratum III B or C.²

A mace-head, resembling A II, no. 1 has been found in the »stone-age village» near Persepolis.³

From Tepé Sialk we have several mace-heads of different forms. An eggshaped specimen of white marble, decorated with angular relief ornamentation derives from the early stratum I and so does a little ringshaped one of alabaster. Another, pear-shaped with medial hole and of white marble, has been found in Tepé Sialk III.⁴

In West Iran, for instance in Tepé Moussian and Susa, various mace-heads of stone have been found. An annular one of a grey stone material reminds one of our A II, no. 1.⁵ The same is the case with a mace-head from Susa, which shows, however, a pointed oval cross-section.⁶

A pear-shaped or egg-shaped mace-head with Sargon of Agades incised name indicates that such weapons were used in Mesopotamia before or about 2500 B. C.⁷

From Nineveh there is a reproduction of a pear-shaped, broad mace-head of red limestone, probably from the first half of the 3rd millenium B. C.⁸

Pear-shaped and spherical mace-heads are known from Tepe Gawra VIII, VI and V,⁹ in all 23 specimens.

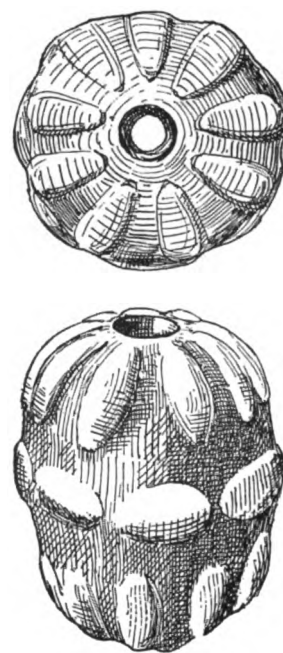


Fig. 573

¹ T. J. ARNE, *Keulenköpfe, Szepter und Handgriffe von Luristan*, fig. 9. (Prussia Bd. 33, 1—2).

² E. SCHMIDT, *Excavations at Tepé Hissar*, p. 221. (Pl. LXIII. H. 2748).

³ E. HERZFELD, *Iranische Denkmäler II*, 1. Steinzeitlicher Hügel bei Persepolis, p. 17, Pl. XXVIII.

⁴ R. GHIRSHMAN, *Fouilles de Sialk*, 1938, p. 20, 21 et 55, Pl. LII, 3, LIII, 4 et LXXXV.

⁵ J. DE MORGAN, *La préhistoire orientale III*, Fig. 138.

⁶ IBIDEM, Fig. 145, 1. Montelius, *die älteren Kulturperioden im Orient und in Europa II*, fig. 63—70.

⁷ IBIDEM, Fig. 145, 5.

⁸ THOMPSON & MALLOWAN, *The British Museum Excavations at Nineveh, 1931—1932*, p. 148, Pl. LXX, 9 (Liverpool Annals XX 1933).

⁹ SPEISER, *Excavations et Tepe Gawra*, p. 86. Pl. XL, 1—10, XLII, 1—4.

In the cultural layer no. 2 at Alaca Höyük in Asia Minor was found a round, rather flattened mace-head of diorite.¹

Pear-shaped, round, biconical and egg-shaped mace-heads are known from Troy II and later.² Spherical, somewhat flattened mace-heads, sometimes with angular profile, have been found in Kusura, in Thermi and Alişar.³

In Egypt, dating right back to pre-dynastic time, there occur numerous annular, disc-shaped and pear-shaped mace-heads of different kinds of stone, often alabaster or white limestone. The latter form is younger and was for long preserved as a mark of dignity.⁴

It is probably from Egypt that the prototype of the pear-shaped and apple-shaped mace-heads that are so common on Crete originally came.⁵

In Europe we find both annular (disc-like, flattened spherical and spherical) and pear-shaped mace-heads of stone. The former type seems to be the older and the commoner, especially in its disc-shaped form. It is known from Thessaly,⁶ Croatia,⁷ Hungary,⁸ Italy,⁹ France,¹⁰ from Russia and Germany,¹¹ indeed, even from Scandinavia.¹² Italy shows the less common pear-shaped type in a number of skeleton-graves, e. g. at Viterbo near Rome and on Sicily.¹³ DÉCHELETTE has affirmed that there is undoubtedly a connection between the pear-shaped mace-heads in the Orient and in Europe.

If from Shah Tepé we turn eastwards, we find a »probably unfinished annular

¹ H. Z. KOŞAY, Alaca Höyük Hafriyatı, 1936, Pl. XLVIII Ar⁵A 263.

² H. SCHMIDT, H. Schliemann's Sammlung trojanischer Altertümer, p. 276.

³ W. LAMB, Excavations at Kusura near Afyon Karahissar, (Archaeologia LXXXVI p. 47, Fig. 22 and LXXXVII p. 263, Fig. 25.)

The mace-heads from Kusura belong to periods B and C.

»At Alişar, mace-heads appear for the first time in the middle strata of period I a; the earliest mace-head from Thermi may belong to Town I or Town II; no certain specimen can yet be assigned to Troy I or to any contemporary site in western Anatolia. In Crete on the other hand these weapons date back to the neolithic age, and in Egypt to the pre-dynastic period.» Compare: K. BIRTEL, Prähistorische Forschung in Kleinasien, p. 46.

⁴ EBERTS Reallexikon der Vorgeschichte, VI, p. 336 et seq.

FLINDERS PETRIE, Prehistoric Egypt, 1920, Pl. XXV, XXVI.

⁵ EBERTS Reallexikon der Vorgeschichte, VII, Art. Kreta, Taf. 36, 6—8.

⁶ TSOUNTAS, Ai proistorikai akropoleis Dimeniou kai Sesklou, p. 322, Figs. 246—250.

⁷ S. LJUBIĆ, Popis arkeologičkoga odjela nar. zem. Muzeja u Zagrebu 1889, Tab. V. 4.

⁸ GORDON CHILDE, The Danube in Prehistory, pp. 76, 86 (Csoka and Lengyel per. II, Spheroid mace-heads) p. 92: »The spheroid mace is an old Asiatic and Aegean type that presumably came up the Danube at this epoch.» (Danubian II or Vinca II.)

⁹ O. MONTELIUS, Die vorklassische Chronologie Italiens, Text p. 5. Fig. 4, 1—3.

¹⁰ J. DÉCHELETTE, Manuel d'archéologie I, p. 518 et seq. Fig. 187: 1, 2, 4, 5.

¹¹ T. J. ARNE, De förhist. tiderna i Europa, p. 379. Pear-shaped mace-heads were found in Trans-Caucasia (A. SPITZYN, Nekotorje Zakavkazskie mogilniki, Kizil Kala and Kizil Vank, fig. 7 and 44 (Izvestija imp. arch. Kom. 29. 1909).

GORDON CHILDE, The Danube in Prehistory, p. 53 (disc-shaped heads of maces in »Danubian I,» spheroid mace-heads in the Altheim-Mondseeculture).

¹² O. MONTELIUS, Minnen från vår forntid, Figs. 208—210.

S. MÜLLER, Ordning av Danmarks Oldsager I, Fig. 121, 122 (In single graves).

¹³ J. DÉCHELETTE, Ibidem I, p. 519, Fig. 187, 3.

grey stone mace-head» in the south Kurgan at Anau (Culture III)¹ Also other types of mace-head are represented there.

Mohenjo-Daro in the Indus Valley shows both annular and pear-shaped mace-heads of alabaster and other kinds of stone. Some of the annular specimens are provided with a sharp edge.²

The earliest datable pierced mace-heads of stone seem to be found in Egypt, whence knowledge of this weapon presumably spread both to the north and the east.

d) *Door-sockets (Door hinge-stones)*.

Altogether eight large stones, most of them more or less flat on one broad side and with a hemispherical depression in the middle, may be regarded as *door-sockets*. It is not out of the question that one or two of them, e. g. the round stone no. 599 B II81 with somewhat convex sides, may have been used as mortars. (Pl. LXXII, Fig. 574). The material seems to be limestone. The majority are more or less four-sided, one is triangular (no. 1670 G III) and another rounded (no. 599 B II81). Six stones attain a length of 17.1 to 22.75 cm. and a breadth varying between 11.3 and 22.4 cm. The difference between length and breadth is as a rule only 4 to 5 cm. One stone (no. 381 A II107) measures 41.00 × 29.00 cm. (Pl. LXXII, Fig. 575), and another (1125 E II), only half of which is preserved, 29.6 × 7.80 cm. The stones vary in thickness between 7.4 and 12 cm. The biggest diameter of the hemispherical depression varies between approximately 8 and 17 cm.; its depth amounts from about 2.5 to 3.8 cm.

Only two such stones were found in layer III (no. 1670 G III; 599 B II81, +1.40 m.); four belonged to layer II (no. 381 A II107, +0.75 m.; no. 708 B II25, +2.90 m.; no. 867 E II and no. 1127 E II). Two were found in layer I (no. 40 A I10, +5.30 m.; (Pl. LXXII, Fig. 576); no. 598 E I); but these probably belonged originally to the layer beneath.

Similar door hinge-stones were found in Tepé Hissar, though not in the oldest layer. They appear first in Hissar II (1 specimen) and III (a few specimens). These seem, however, to be more rounded,³ not square. The ring-shaped stones with a round hollow that were found in the northern mound of Tepé Sialk⁴ are regarded by the excavator as mortars.

Such door-sockets are presumably rather common in dwelling-finds from Iraq's copper and bronze-ages. In Uruk occur »door-sockets» provided with inscriptions,⁵ and this was also the case in Lagash (Telloh).⁶ They

¹ H. SCHMIDT, The Archaeological Excavations in Anau, Pl. 44, 11.

² J. MARSHALL, Mohenjo-Daro and the Indus Civilization, p. 459 et seq. Pl. CXXXIV, 25—30.

³ E. SCHMIDT, Op. cit. pp. 122 and 222.

⁴ R. GHIRSHMAN, Op. cit. I, p. 21, Pl. LIII, 17.

⁵ V. CHRISTIAN, Op. cit., p. 356, Pl. 398, 1 — »Die Türen drehten sich mit ihren Zapfen, die mit einem Kupferschuh überzogen sein konnten, in Angelsteinen, die oft Beschriftung aufweisen.

⁶ A. MONTELIUS, Die älteren Kulturperioden II, fig. 535 (3000—2500 B. C.).

were also found in the early cultural remains at Abu Shahrein (Eridu) and Obeid.¹

Such door stones were also used in Asia Minor, for instance in Troy II.² In Alishar »some door-socket stones were scattered about in the débris; but there was probably none *in situ*, i. e., there was none at a spot suggesting a doorway. The socket stones were identified by a depression smoothed by use and situated in a flat surface. These depressions were about .05—.10 in diameter while the stones ranged from about .30 to .50.»³ Door sockets are also mentioned from Sesklo in Thessaly.⁴

e) *Mill-stones (saddle querns).*

Among the commonest household utensils of a primitive, agricultural, settled population must be reckoned hand mills of stone for grinding wheat or other kinds of grain. These are found in about the same form over large areas of Asia, Europe and Africa. In Shah Tepé at least 46 such stones were found, of which the great majority were left behind in the museum in Teheran on account of their weight. Not all the mill-stones have been listed in the inventory, so that minimum figures are given in the text, while the figures in brackets refer to the probable sum-total.

The mill-stones are commonly of sandstone (or limestone), oval or of rounded rectangular shape, sometimes more in the form of a square or hexagon, with a flat, often somewhat concave »saddle-shaped» surface, the opposite side being left rough, flat or irregularly convex. At least one third of the stones were incomplete, having been broken in two (Pl. LXXII, Fig. 577 a, b), so that generally only a small part, the half or two thirds, was left. Occasionally both halves of the one stone were found.

The biggest mill-stone measured 42.5 cm. in length, 24.5 cm. in breadth and 10.5 cm. in thickness (no. 443 C II 95, +3.30) (Pl. LXXIII, Fig. 578). The next biggest was no. 1305 G II 7, an oval stone slab with end showing where the stone had been broken in two, 40×22.3×6 cm. About 10 mill-stones have a length of roughly 30 cm. (at most 32) a breadth varying between 12.85 and 28 cm. and a thickness of from 4.6 to 9.05 cm. The thickest of these has a broken off end. Five stones are about 25 cm. in length and six about 20 cm. Of these, however, half have been broken in two, and were thus originally longer. The broken stones vary in length between 12.7 and 17.4 cm. and in breadth between 9.6 and 14.6 cm. The thickness varies approximately between 3 and 8 cm.

¹ O. MENGHIN, *Op. cit.*, p. 331. »Die Türen hatten Angelzapfen, die unten in einem ausgehöhlten Steine liefen, der von weiter her besorgt werden musste.»

² K. BITTEL, *Prähist. Forschung in Kleinasien*, p. 26 »Die Türen drehten sich bereits in steinernen Angeln».

³ H. v. DER OSTEN und E. SCHMIDT, *The Alishar Hüyük*, Chicago 1930, p. 71.

E. SCHMIDT, *Anatolia through the Ages*, Chicago 1931, fig. 97.

⁴ WACE & THOMPSON, *op. cit.* p. 72. »Mortars. A few were found; these resemble very closely the stones in which the pivots of the doors turned.»

Two stones are provided with a broad groove in the middle (no. 517 C II and no. 707 F I). One of these (no. 707 F I) has been burned. 6 (9) of the stones were found in layer III, 5 in layer I and the rest in layer II. Most of the mill-stones lay in shaft A, to wit 21; 6 (9) in B; 8 (9) in C; 4 (5) in D; 3 (7) in E; 1 (7) in F and 3 specimens in G.

Two mill-stones were found near graves, namely no. 402 (A III s⁴k) and no. 115 (C I s⁹a, quite flat); but it is uncertain whether they originally belonged there. The stones that were found in layer I may possibly belong to the Musulman period, as the grinding methods in more primitive communities have probably not changed so much in the course of thousands of years. It is, however, not out of the question that the stones have been taken up from older layers in the course of agricultural work.

As has previously been pointed out several mill-stones were sometimes found together, e. g. in D II 1, where 5 stones lay in a heap (Fig. 88).

In Tepé Hissar's oldest layer, I, such stones were rare.¹ This was also the case in Hissar II. In Hissar III they were common, and were found also in the ruins of houses, though in fragments. The oldest mill-stone from Tepé Sialk derives from period I, substratum 2.²

Also in Susa such stones have been found.³ In early settlements in Irak and Anatolia these »saddle querns» are very common,⁴ and this is also the case on the Balkan Peninsula and in the Danubian culture of the stone-age and in Hungary from the copper-age.⁵

f) *Pestles or grinders, polishing stones and whetstones.*

In »Excavations of Tepé Hissar» E. SCHMIDT remarks (p. 121): »If it (wheat or similar grain) was not ground on mullers, it may have been pounded in stone mortars». Certain cylindrical or oblong stones, showing signs of wear at one or both ends, probably served either as pestles or for grinding.

In Shah Tepé at least 6 stones that may be regarded as pestles have been found. (Pl. LXXIII, Fig. 579 a, b, c). Four were found in layer III and two in layer II (no. 341 A III4, no. 522 A III, no. 1439 F III, no. 1590 F III, no. 601 E II, no. 1491 E II). The material is greenstone and diorite and other hard stones. In cross-section they are cylindrical, oval or in the form of rounded squares with a diameter of about 6 cm. Four attain a length of from 13.1 to 17.55 cm., two measure only 7.5 and 9.85 cm. respectively. Several are polished.

¹ E. SCHMIDT, Op. cit., p. 59. »Fragments of mullers were also associated with refuse of Hissar I C, and a muller or hand grinder lay near a Hissar I B skeleton». Ibidem pp. 121, 167, 220. Pl. LXIII, H 1702 and 5207, p. 311.

² R. GHIRSEMAN, Op. cit., p. 21, Pl. LIII, 18. (Egrugeoir en granit gris).

³ DE MORGAN, La préhistoire orientale III, fig. 91.

O. MONTELIUS, Die älteren Kulturperioden II p. 223, fig. 678.

⁴ MALLOWAN & CRUIKSHANK, Op. cit., p. 104.

E. SCHMIDT, Anatolia through the Ages, fig. 97.

⁵ V. G. CHILDE, The Danube in Prehistory, pp. 45, 103 (Erösd), 210.

Here and there in the settlement in Shah Tepé, but also in graves, were found rounded, bright polished stones of various materials, in several cases of white mesozoic liver limestone. (Pl. LXXIII, Fig. 580 a—f). They seem for the most part to be water-polished pebbles that have been picked up in the beds of the mountaintstreams. Stones are not otherwise to be found in this steppe-country. Some of them have then been afterwards polished by man and, to judge by the traces in the edges, have been employed as chipping-stones in the making of flint-flakes. They may also have been used as polishing or smoothing stones for clay vessels, bone implements or textiles(?).

Some thirty such stones were brought away, of which number more than two-thirds were found in shaft A, and of these, four derived from A III, but the great majority from A II. A few more were found in B, G, C, E and H, with a single exception (E III no. 1193) in layer II. Some lay in layer I, but it is impossible to assert that this was their original resting-place. The length of these stones varies commonly between 6 and 12 cm.; the breadth is somewhat less and the thickness 2—5 cm. Further, there are about 10 oblong stones, many of rather black rock, of which the length is approximately double the breadth, and of which most have a rectangular cross-section. The length varies for the most part between 10 and 13 cm. At least a couple of sides are as a rule very smooth. I regard these stones as whetstones, though none is provided with perforated holes. Three were found in layer III, the rest in layer II.

Pestles, whetstones and polishers were found also in the various layers of Tepé Hissar, but not in great numbers¹ except in layer I.

g) *«Two-horned» stone.*

In A II was found a curiously shaped stone (no. 134 A II44, +5.30 m.), whose use is not quite clear. (Pl. LXXIV, Fig. 581). The stone forms a square plate with two erect horns, between which there is a semi-round depression. The length of the whole slab is 20.8 cm., the breadth 13.6 cm. and the thickness 4.3 cm. The edge of the almost straight base is convexly rounded and seems to be polished.

It is conceivable that the two horns may have served as handles, when the stone was dragged backwards and forwards to grind grain or to pulverize some other substance (cosmetics). This seems to me more probable than that it had a religious significance, though the stone reminds one of the «horned altars» and «consecration horns» of stone that A. Evans found on Crete in connection with double axes of copper or bronze, and that are found in clay in Anatolia.²

h) *Slate discs.*

In Shah Tepé were found about twenty small slate discs, for the most part round or oval. (Pl. LXXIV, Fig. 582, a—g). Some of the discs have a string-hole, some are

¹ E. SCHMIDT, Excavations at Tepé Hissar, pp. 58, 122, 220—221, Pl. XVII, XXXI, LXIII.

² A. EVANS, Palace of Minos II, p. 81.

E. SCHMIDT, Anatolia through the Ages, fig. 152.

ANNALS OF ARCHAEOLOG. and ANTHROP. LIVERPOOL I, pp. 24—29.

without. In the oval discs the string-hole is generally near one of the ends, while in the round ones the hole is in or near the centre. At least 12 of the discs are oval, 8 round. In addition there are a slate pendant, shaped like a foot with the lower part of the leg (no. 576, B II; Pl. LXXIV Fig. 583) and a couple of long, narrow slate objects resembling whetters. (Pl. LXXIV Fig. 584 a, b). Half of the discs have string-holes and two (no. 486 C II, oblong, and no. 1680 E III, round) have the beginnings of such holes. Of the round discs one (no. 1372 G II) is of a green-coloured stone, possibly limestone, and has 5 pit-like depressions grouped about the middle hole. (Pl. LXXIV Fig. 585). A circular whorl (no. 1272 C III), with rounded, well-polished edge, is probably also of some harder material than slate.

The size varies. The largest oval disc with hole (no. 54 A II 4) measures $7.3 \times 4.8 \times 0.9$ cm., and a similar one without hole (no. 209 A II 73) $8.6 \times 5.6 \times 0.8$ cm. The smallest oval disc with hole near the centre (no. 1009 G II) is 2.7 cm. in length, 1.7 cm. in breadth and 0.25 cm. in thickness. The almost round, well-polished disc with the beginnings of a centre-hole (no. 1680 E III) measures $5.7 \times 5.3 \times 0.4$ cm.; but the small, rounded slate disc with hole no. 47 A II 22 only $2.65 \times 2.5 \times 0.3$ cm. Of those mentioned here 9 discs (including the two oblong specimens resembling whetters and without holes) were found in layer III and 2 in layer I (no. 54 A II 4, the finest of the oval discs, and no. 521 E I, a round disc with hole near the edge). The others derive from layer II, including the figure in the shape of a foot (no. 576 B II). The specimens found in layer I are without doubt prehistoric. No differences that could be referred to different dates are observable. Boring has been performed from two sides except in the case of the small and thin discs no. 1009 G II and no. 1660 E III.

It is difficult to guess what purpose these oval or round discs may have served. They are scarcely beautiful or valuable enough to have served as ornaments, although it is conceivable that some magic significance may have been ascribed to them in this connection. It is possible that the larger discs may have been used as cosmetic-palettes.

i) *Alabaster Objects.*

Besides a great number of beads, at least 24 objects of alabaster have been found in Shah Tepé. Two of these are *mace-heads* (B II 730 and E II 737), three are *whorls* (A II no. 165; F II S¹ no. 754; G II no. 1019) and the rest either whole or fragmentary *vessels*. The latter will be described in detail below.

The oldest of the objects is probably an almost *cylindrical vase* with slightly concave sides (B II 26, no. 710), found at +3.00 m. It belongs to layer II b. Height 6.8 cm. Diameter of mouth 9.00 cm.; diameter of bottom 8.5 cm. (Fig. 586).

All the other alabaster finds derive from layer II a, 8 with certainty from the upper layer II a¹ and 4 from II a².

A further *three cylindrical vases* were found (E II S³ no. 627, Fig. 236; F I 2

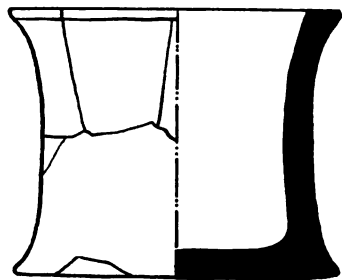


Fig. 586

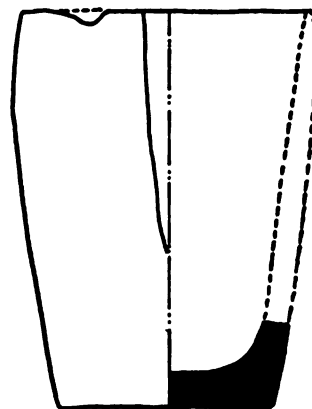


Fig. 586 a

no. 722, and F II S¹ no. 753; Fig. 251). The little vessel F I₂ was listed and numbered before the boundary between F I and F II could be established with certainty. It was found at +6.00 m., while the boundary-line is as high as +6.70 m. The vessel is small (height 5.45 cm., diam. of base 6.6 cm., diam. of mouth 7.00 cm.) and provided with expanding rim and base. The damaged vessel E II S³ k no. 627 measures 9 cm. in height and 9.3 cm. in diameter at the base. It was found in II a, the youngest layer, in a grave at +6.10 m. together with 9 clay vessels, a copper awl or pricker and about 80 alabaster beads. Also the vessel F II S¹ no. 753 derives from a grave at +6.80 m., which contained a large cylindrical clay vessel and an alabaster whorl (possibly a large bead with a diameter of 3.3 cm.). The alabaster vase is of the same type as those previously mentioned and measures 7.0 cm. in height and 8.5 cm. in diameter.

Alabaster vessels of the same type have been found in Tepé Hissar, where alabaster constitutes a kind of «guiding fossil» for the youngest layer III C (E. SCHMIDT, *Excavations at Tepé Hissar*, p. 214, Pl. LIX, H 3523 and H 2248). Flat, table-like plates of alabaster resting on a high or a low foot have also been found in Tepé Hissar. (SCHMIDT, *ibidem*, Pl. LIX H 3506). From Shah Tepé we have a *plate* resting on a low, hollow, conoid stem. (Pl. LXXV, Fig. 587). The plate has a raised edge and measures 25.0 cm. in diameter (G II s² no. 836). The height is about 6.0 cm. This object was found in a grave which proved, also in the light of the other objects contained therein, to be of late origin. A fragment of a *similar vessel* bears the number A II no. 445.

Other objects of alabaster were *two cups* (F II₈ no. 1142, Fig. 586 a and G II s⁷ no. 1003) The latter is of rose-coloured stone and has the form of a truncated cone. Height 8.1 cm., diameter of mouth 9.1 cm., diameter of base 4.5 cm. (Pl. XXXVIII, (Fig. 268).

In the same grave stood a black effigy vessel in the shape of a female torso. The grave belongs to the youngest prehistoric layer II a¹.

Tepé Hissar has stone cups of similar shape from the late layer III C to show (E. SCHMIDT, Op. cit. Pl. LIX H 5225). In the interesting Tepé Hissar grave CF 47 x—2 were found, besides two alabaster vessels (one cylindrical, the other biconical), an effigy vessel of the same kind as in the Shah Tepé grave, almost globular black clay vessels, a spindle whorl and beads of alabaster, faience beads, a copper earring, a miniature copper axe and bone pinheads (E. SCHMIDT, Op. cit. p. 256.) All these articles formed a combination that it is interesting to compare with the Shah Tepé graves A II s⁴, G II s², G II s⁷, C II s², B II s⁷ and E II s³, all belonging to the layer II a, chiefly its upper part II a¹.

The *cup* F II8 no. 1142 measures 10.6 cm. in height, has a mouth-diameter of 8.1 cm. and a base-diameter of 5.6 × 5.9 cm. It was found rather deep down in layer II a (+4.70 m.). (Fig. 586 a).

As in Tepé Hissar's layer III C, a couple of *cylinder-shaped alabaster columns* (B II s¹ no. 146 and B II5, no. 194) were also found in Shah Tepé II a¹ and II a². The former has a broad groove in the middle of the base. The height is 22.4 cm. the diam. at the base 12.5 cm (Fig. 588 = Fig. 195). The latter is short and damaged at the ends. Height 14.85 cm., diameter 5.5 cm. In Tepé Hissar these columns are often found in combination with flat, round alabaster plates or discs, but E. SCHMIDT does not regard them as having served as feet under the plates. He considers that «the feet» were used in a horizontal position (E. SCHMIDT, Excavations at Tepé Hissar, p. 216).

An *alabaster cup* with damaged rim of mouth is listed as B II no. 1376. It has a height of 4.85 cm., base-diameter of 3.2 cm. and mouth-diameter of 8.45 cm. There are also similar cups of clay. There are no illustrations of such alabaster cups from Tepé Hissar.

A little *alabaster flask* has a rounded biconical body and a short, concave neck with flat, outspread rim of mouth, perforated with two holes. (Pl. XXIV, Fig. 194). Height 4.9 cm., diameter 4.45 cm. (B II s⁷ no. 568 at +4.60 m.). It reminds one of the little flasks from Tepé Hissar that E. SCHMIDT refers to as «cosmetic jars» (E. SCHMIDT, Excavations at Tepé Hissar, p. 216, Fig. 128). These also have an alabaster lid. It is possible that the round *lid* A II s⁵ no. 67, perforated with two holes, belonged to a similar *flask or jar*, a fragment of which with narrow mouth was found in the same grave together with alabaster beads and clay vessels. The two lastmentioned graves lie in layer II a².

Finally, we have a number of *fragments of alabaster vessels* (C II 1, no. 186, a bottom piece; F II8, no. 1142 divers fragments; C I5, no. 154; A II no. 279).

If from Shah Tepé and Tepé Hissar we now look further afield, we find that in the southern and younger kurgan at Anau in Turkmenistan (culture III) only a couple of fragments of alabaster vessels have been found. (H. SCHMIDT, Anau, p. 170). Alabaster vessels have also been found in culture IV (Katalog Mesjdunarodnoi Vystavki v Leningrade 1935, pp. 88, 89). Alabaster does not seem

to be a very prominent mineral in West Turkestan. (Cf. MASALSKIJ: *Turkestan-skij Kraj, Rossija*, published by P. P. SEMIONOV TIANSHANSKIJ 1914 and F. MACHATSCHKEK, *Landeskunde von Russisch-Turkestan*, 1921). It does occur, on the other hand, in several places in Iran — not only in the prehistoric graves and ruins of towns. According to R. GHIRSHMAN¹ alabaster occurs in the natural state in the vicinity of the town Kashan, also some miles westwards of Sialk, not far from Dilijan, and finally in the country round about Yazd, where it is also commonest. It is probably from these highland regions that the material for the alabaster vessels in Tepé Hissar and Shah Tepé was obtained. Some few alabaster vessels, including a high cup, are also known from an early prehistoric settlement near Persepolis (Tul-in-Bakun).² Quantities of alabaster vessels have also been found in Susa. The material is stated to derive from the mountains in Luristan.³ The excavations in Moussian (Tépé Aly-Abad) yielded a number of alabaster vessels, including bowls of a more or less conical shape with flat bottoms.⁴

In northern Mesopotamia, in the course of excavations in stratum VI in Tepé Gawra, fragments of a couple of alabaster vessels⁵ have been found, while most of the stone vessels in the older layer VIII were made of basalt. In Assur gypsum-stone, which is akin to alabaster, was used for making statuettes at an early stage (in layer G).⁶

The royal graves in Ur also contained alabaster vessels, or in any case vessels »of the finest stalagmitic calcite, richly vained and beautifully coloured». ⁷ WOOLLEY discusses the question of probable Egyptian influence, but is of opinion that the material came from the west coast of the Persian Gulf. Both cylinder-shaped and truncated cone-shaped vessels occur (Pl. 176, U 12696, U 11818; Pl. 180, U 8331; Pl. 241, 7, 13; Pl. 242, 16, 19).

Fragments of some alabaster vessels have also been found in Troy.⁸ Alabaster was used in the making of stone vessels in prehistoric times also in India. In this connection E. MACKAY⁹ says: »Stone vessels are comparatively rare at Mohenjo-Daro; only twenty-six in all have been found.» »All the vessels are of alabaster with four exceptions.» »The soft white alabaster used to make these vessels is of very poor quality. Most of the vessels are thick and clumsy-looking, and it is evident that no particular care was taken in their manufacture.»

¹ R. GHIRSHMAN: *Fouilles de Sialk pres de Kashan I*, p. 54 (Paris 1938).

² E. HERZFELD, *Iranische Denkmäler, Steinzeitlicher Hügel bei Persepolis* (Lieferung 2, 1, Tafel XXIII, Berlin 1932).

³ *MÉMOIRES DE LA DÉLÉGATION EN PERSE*, VIII, p. 42.

⁴ *IBIDEM*, p. 143, figs. 288 and 290.

⁵ E. SPEISER, *Excavations at Tepé Gawra*, I p. 98. Philadelphia 1935.

⁶ W. ANDRAE: *Die Ishtar-Tempel in Assur* Abb 24 (*Mitteilungen der deutschen Orient-Gesellschaft*, No. 61, Dec. 1921); SCHÄFER & ANDRAE, *Die Kunst des alten Orients*, 1925, pp. 458—460.

⁷ WOOLLEY, *Ur Excavations*, II, p. 379.

⁸ H. SCHMIDT, *Heinrich Schliemanns Sammlung trojanischer Altertümer*, p. 290, Nos. 7908—7911 (without established dating).

⁹ J. MARSHALL, *Mohenjo-Daro and the Indus Civilization*, II, p. 369.

On the subject of alabaster, E. PASCOE writes in the same work (Mohenjo-Daro etc., II, p. 679): »True alabaster is a hydrated sulphate of lime, but the name was applied in ancient times generally to carbonate. True alabaster is sufficiently soft to take a scratch from the finger-nail, and does not effervesce with hydrochloric acid; by these simple tests it can be distinguished from the carbonate. Oriental alabaster, the carbonate of lime, was used in Ancient Egypt for canopic jars and other objects. — The mineral was extensively worked near Sues and Assiut in Egypt, and many ancient quarries have been found in the hills above the Tel-el-Amarna plain. A very beautiful arragonite travertine occurs in considerable quantity 1½ miles west of Töpchi on the road to Bāmiān in Afghanistan; a similar rock is found in the hills behind Jabal-us-Sirāj, but in very small quantity. — Gypsum is abundant in Persia, Mesopotamia and over a large part of India. Alabaster is merely a refined and transparent form of gypsum; how much, if any, of the Persian or Mesopotamian material is sufficiently fine-grained or delicately shaded to warrant the term »alabaster« is not known. A beautifully marbled or mottled alabaster is described as coming from near the village of Ahar, north of Teheran, on the north side of Kūh-i-Shamirān.»

The finds from Tepé Hissar and Shah Tepé leave no room for doubt that real alabaster is to be found in Iran and has been used at least since about 2000 B. C.

This mineral seems, however, to have been principally employed in Egypt. Some of the most elegant and finely wrought alabaster vessels in existence come, as is well known, from Tutanchamon's grave. But Egyptian alabaster played an important rôle even much earlier than this.¹ The truncated conical and the cylindrical stone vessels were common during different epochs, and Egyptian alabaster vessels were exported even to Palestine and Crete.

Simpler alabaster vases were fashioned even during pre-dynastic time, but during the period of the older kingdom the stone-cutter's art made great advances. From the 6th dynasty we have numerous alabaster vessels with inscriptions, amongst which are flat tables on a conical foot, strongly reminiscent of the alabaster plates with foot found in Shah Tepé and Tepé Hissar.²

The Egyptian alabaster vessels thus show several of the shapes to be found in Shah Tepé and Tepé Hissar, and they are in part older. It is not possible, however, to demonstrate with certainty an influence from west to east. The Shah Tepé forms may have developed from indigenous prototypes in clay. So, for example, the flat plate with raised rim, resting on a foot, is known from Shah Tepé (E III s⁶). So far, however, there is no time-link between these clay vessels and the alabaster plates.

¹ FLINDERS PETRIE, *Prehistoric Egypt*, 1920, p. 33 et seq.

² The surface of the Egyptian alabaster tables seems to be quite flat. See: British Museum, *A GUIDE TO THE THIRD AND FOURTH EGYPTIAN ROOMS*, 1904, p. 247 et seq.; FLINDERS PETRIE and J. E. QUIBELL: *Naqada and Ballas*, Pl. III, 1, Pl. XVI, 167, 168, p. 3 (grave 160 in Ballas); EBERT: *Reallexikon der Vorgeschichte*, Art. Steingefässe, Taf. 99, d. (about the 3rd dynasty).

BEADS

In Shah Tépé were found over 310 beads of various materials, of which number at least 248 were distributed among 15 prehistoric skeleton-graves. Four such graves contained whole necklaces with 24, 60, 60 and 83 beads respectively.

It might be thought that the earliest and most primitive pendants would be those taken straight from nature. There were, however, no pendants of for example *mussel-shell* in Shah Tépé before layer II a. These were perforated shells of the mussel *Didacna trigonoides* that is a native of the Caspian Sea (A II₂₀ no. 253 and C II s² no. 275). (Pl. LXXV, Fig. 589 a, b).

At least 31 beads were of bone. The majority, at least 28 (some of them broken), were cylindrical, 2 cm. in length and made of hollow bones from birds (G III₂ no. 1506; +2.40 m.). (Pl. LXXV Fig. 590). Three bone beads were flat and round, and were found together with about 80 alabaster beads (F II s³ no. 629; +6.10 m.; (Pl. LXXV Fig. 599).

At least 37 beads were made of *burnt clay*, black, grey or red in colour. A number of these are spherical in shape, others alternately biconical, cylinder-shaped, rather flat and oval or egg-shaped. (Pl. LXXV Fig. 591 a—b). Some are also planeconvex. As regards the latter, and at least three of the biconical ones, that measure from 2.25 to 3.35 cm. in diameter, it may be questioned whether they did service as spindle-whorls. Three of the beads were shaped like small vases (E II no. 1111, 2.7 × 2.7 cm.; F III no. 1567, height 2.55 cm.; E III no. 1681, 2.9 × 2.4 cm.) (Pl. LXXV Fig. 592), while a fourth had the form of a cotton-reel (G III no. 1500). (Pl. LXXV, Fig. 593).

A round and an oval bead, both slightly convex, have notched edges (B III no. 1154 and A II, no. 283; (Pl. LXXV, Fig. 594). A very hard burnt clay bead (A III no. 335) 2.2 cm. in length and 1.8 cm. in height has a flat oval bottom and a rounded, perforated top. (Pl. LXXV, Fig. 595). It might be regarded as a sort of seal though without any lettering. Otherwise, the object is very like a seal of white limestone, found in Susa I,¹ where it was quite unique. Scarcely any of the clay beads had been deposited in the graves.

A couple of long, barrel-shaped clay beads from layer F III are very primitive and irregular. The string-holes are very carelessly made, one of them being not even completed.

The great majority of the beads are made of different kinds of stone. More than 175 are of hard *alabaster*, or of *gypsum* and white *limestone*; about 30 are of a black stone, probably *bituminous limestone* or *carbonaceous shale*; about 20 of *frit* or *faience*, thus a kind of burnt and glazed clay; 5 or 6 of *carnelian*; 4 of *lapis lazuli*; 4 of *greenish stone*; a couple of *rose-coloured limestone*, one of *yellowish stone* and one of *chalcedony*. In addition there are 4 spiral beads of *copper wire* and 7 beads of *glass*.

¹ DE MORGAN, Délégation en Perse, XIII, p. 10, fig. 25 bis.

It is stated in, for instance, *Encyclopaedia Britannica* that antique alabaster commonly consists of carbonate of lime with hardness 3, requiring a knife-edge for scraping, while modern alabaster consists of a hydrous sulphate of lime with hardness 1.5—2 and can be scratched with the finger-nail. Both these kinds of alabaster occur in Shah Tepé. So, for example, the cup no. 1142 is of good, hard, yellowish banded and translucent alabaster, while the bowl or cup no. 1376 and the cylindrical vessel no. 753 are of poor, though translucent alabaster that can be scratched with the finger-nail. As regards the beads it is probable that the majority are of gypsum or poor alabaster, but some are perhaps also of white-burnt, calcareous clay with silicon and aluminium as chief constituents. The latter was the case with a number of small oblong cylindrical beads found in Tepé Hissar, while other very small white beads proved to consist of 60.80 % silicon, a slight percentage of aluminium but 27.63 % of magnesia. The latter were made of a natural mineral of the serpentine group.

Alabaster of the simpler sort or gypsum seems to be the material of which the low white cylindrical beads in the two necklaces *A II s⁵* no. 68 and *F III s³* no. 1435 (Pl. LXXV, Figs. 596 and 597) were made (12 beads in the former and 31 in the latter). In the smaller and younger necklace there were 7 black bituminous limestone beads, while the larger and older of the necklaces contained 25 of such beads, the majority being low cylindrical specimens while a few were barrel-shaped.

Of the black beads in the larger necklace the 16 disc-shaped ones measured 0.8—0.9 cm. in diameter; three barrel-shaped ones 0.8—0.9 cm. in diameter and 0.9—1.05 cm. in length, 6 small biconical ones 0.5 cm. in diameter. A little bead of hard alabaster measured 0.4 × 0.55 cm., the others 1.1—0.9 cm. in diameter and 0.8—0.25 cm. in height. Quite unique is a long, bi-conical bead of a hard limestone, grey in colour. Length 4.9 cm. (*G II* no. 1259; Pl. LXXV, Fig. 598).

In the biggest of all the necklaces, *F II s³* no. 629 (Pl. LXXV, Fig. 599), besides three bone beads there were over 80 small beads, some simple, others segmented, that appeared to be made of gyps-alabaster. Unfortunately it has not been possible to submit these beads, at present preserved in the Teheran Museum, to a closer examination. The segments vary in number up to seven, and it is possible that they do not consist of alabaster but of silicon-containing clay mixed with lime that has first been shaped into tubes around a hollow straw or tube and then squeezed together with some instrument and burnt.

A couple of large biconical beads reminding one of spindle-whorls are of light-red limestone. One of them was found in the grave *C II s²* no. 274. (Pl. LXXVI, Fig. 600). It measures 2.7 cm. in diameter and 2.9 cm. in height. The other bead from *A II* 106 no. 380 is 2.9 cm. in diameter and 3.05 cm. in height (+ 0.60 m.). (Pl. LXXVI, Fig. 600 b). The rich grave *C II s²* contained, besides the already mentioned rosecoloured limestone beads, 10 large undoubted faience beads and 4 or 5 round or oblong beads closely resembling glass beads but falling easily to pieces in the form



Fig. 605 a



Fig. 605 b



Fig. 605 c

of lamella-like pieces dust, also a collection of 45 beads of which I at first presumed 40 to be made of gypsum or limestone. (Pl. LXXVI, Fig. 601). Most of these beads are milk-white, cylindrical, 0.7—1.0 cm. in length. A couple of them have three small elevations or buds each. Like some of the cylindrical beads they are of a greenish shade. I now suppose that also these 40 beads are *faience beads* whose light green glazing has worn off.¹ Nor is it quite clear whether some other beads that were found in the same grave C II s² together with the child's skeleton are faience or weathered *glass*. (Pl. LXXVI, Fig. 602). Four are intact (a cylindrical one, 2 barrel-shaped ones and a round one, slightly squeezed in at the sides) and two are fragmentary. The fragments and a couple of the other beads have a beautiful blue colour inside, and the weathering effect reminds one of the cells in a wasp's nest. One barrel-shaped bead is greenish with several dark transverse bands.

In grave G II s⁴ at +6.60 m. lay, besides a copper ring and other objects, a cylindrical, *light yellow bead* of a glass-like substance (no. 958).

Less common are the 10 large *faience beads* that were found in or just near grave C II s². (Pl. LXXVI, Figs. 601 and 605). The surface is sometimes of a green or greygreen shade. Two beads are pyramid-shaped with square base and string-hole at the top. Height 2.5 and 2.4 cm., side of base 1.7 and 2.0 cm. respectively. On the base of the first-mentioned bead may be seen four hooks, giving the impression of a mutilated swastika, while on the base of the other are a number of hooks, as it were stylized tendrils. (Pl. LXXVI, Figs. 603 and 604). Another bead has the shape of a truncated cone with round base, ornamented with divers straight hooks inside two circles (no. 245). The diameter is 3.3 cm., height 1.55 cm. (Fig. 605 a, b, c). The other 7 beads are rectangular and between 0.6 and 0.25 cm. in thickness. All have two string-holes, running longitudinally through the beads from one end to the other. The largest bead (2.7 × 2.5 cm.) is surmounted on top with 4 obliquely hatched ridges. Three other beads have five ridges and the remaining three 6 ridges, which in their turn are so arranged as to produce

¹ BECK & STONE, *Faience Beads of the British Bronze Age*, p. 207 et seq. (Archaeologia, Vol. LXXXV 1936).

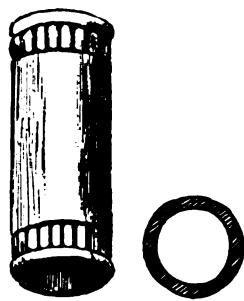


Fig. 606

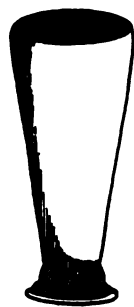


Fig. 607 a

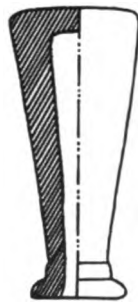


Fig. 607 b



Fig. 608

36 small squares. These six beads vary in length from 2.35 to 1.8 cm. and in breadth from 1.9 to 1.4 cm.

The three beads with meander-hooks probably served as tattooing stamps.

It is evident that all the beads in grave C II s² once formed a single necklace, the large rectangular beads serving as »spacers».

A cylindrical *faience bead* with double bands of teeth ornaments, 5.5 × 2.0 cm. is probably also connected with grave C II s² (C II 5 no. 190; +5.80 m.). (Fig. 606).

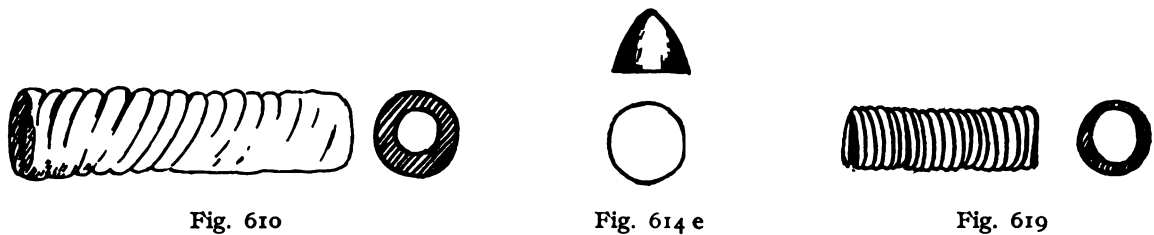
To the same grave belongs further a little *faience bottle* with round flat bottom, embellished at the top with a tooth ornament, 5.45 cm. in height and 2.5 cm. diameter of bottom. (Fig. 607 a, b).

In grave G II s² was found a little flower-like greenish white *faience object* with five striated sepals and a short tube on the under-side. The diameter is 2.8 cm. (Fig. 608 and 642.) This object is mentioned here, but it cannot be directly characterized as a bead as there is no string-hole running right through it. It is possible that it served as the head of a bone-pin.

Five *faience beads*, three of which are cylindrical, one rounded and a larger one checkered and rectangular, were found together with fragments of a copper ear-ring in a grave at +5.50 m. (G II s⁵ a no. 1002; Pl. LXXVI, Fig. 609). The beads agree in all particulars with those in grave C II s², but the grave seems to belong to a somewhat older layer.

Finally, mention may be made of a cylindrical, *spiral-ornamented faience bead*, 4.5 cm. in length, that was found in grave H II s² no. 1763 at +5.65 m. (Fig. 610).

Four beads are of *lapis lazuli*, two of them being found in the older layer and two in the younger. One of them is cylindrical (E III no. 1682), and another trapezoid (A III no. 590). (Pl. LXXVI and XCII, Fig. 611 a, b). From the rich grave B II s⁷ (+4.60 m.) we have an almost round, flat, blue lapis lazuli bead, found together with a bead of carnelian and two rectangular gypsum beads with notches in the long sides (no. 600; Pl. XCII, Fig. 612 a—d). Finally, we have a barrel-shaped lapis lazuli bead (A II 9 no. 45), also found at +4.60 m. (Pl. LXXVI, Fig. 613).



The prehistoric *carnelian beads* are 6 in number. Four small round, flat carnelian beads with a diameter of 0.6—0.7 cm. were found in a grave with four clay vessels (F IIIs¹ no. 1327; (Pl. LXXVI, Fig. 614 a—d). A little, conical, burnt carnelian stone without string-hole, 1.0 cm. in diameter and 0.7 cm. in height lay in layer II (A II62 no. 120) at +5.20 m; (Fig. 614 e).

The most interesting of the beads was the already mentioned little carnelian bead, square in shape and with tapering oval section (Pl. LXXVI Fig. 615 = Pl. XCII, Fig. 612 b), that was found in grave B II s⁷ (no. 600). On the two convex sides it has a white etching of circles and strokes. Similar beads with the same shape and ornamentation have been found in «The Kings' Graves» in Ur¹ and in Mohenjo-Daro in India.² H. BECK remarks that «they cannot be later than 2750 B. C. and they may be earlier. The beads found at Mohenjo-Daro are pretty certainly the same date.»³ Continued excavations in Ur,⁴ however, during the years 1933—34, have yielded similar beads from Sargonide times, i. e. about 2500 B. C., and they may perhaps be even younger still.

WOOLLEY remarks: «Probably the bleached beads are of Indian manufacture; in any case they provide a further link between the civilizations of the Indus and the Euphrates valleys.» Doubts have been expressed concerning the contemporaneity in different places of the etched carnelian beads,⁵ but when shape and pattern agree so closely as in the cases here mentioned I do not think the contemporaneity can be contested.

A little cylindrical bead (F II no. 1202) seems to be made of a *bluish white*, hard, porcelain-like *stone* (chalcedony?). Another bead of flat oval shape with chipped string-hole in one end (no. 1515 E II) is made of *kenozoic liver-limestone*, that has also been found in Shah Tepé in the form of polishing stones. Mention may also

¹ L. WOOLLEY, Ur Excavations, Vol. II, Pl. 220, Pl. 133; Vol. I p. 373, possibly from grave P. G. 580.

² E. MACKAY in: Mohenjo-Daro and the Indus Civilization edited by J. MARSHALL, Vol. II p. 515; Vol. III Pl. CXLVI, 43.

³ H. BECK, Etched Carnelian Beads, Pl. LXVII, Fig. 1 A. B., Fig. 2 A. B. (The Antiquaries Journal Vol. XIII, 4. Oct. 1933).

⁴ L. WOOLLEY, The Excavations at Ur 1933—34 p. 309 (The Antiquaries Journal, Vol. XIV, 4. Oct. 1934).

⁵ D. H. and M. E. GORDON, Some Observations on Indian Prehistory, p. 10 (Iraq. Vol. VII, 1. 1940).

made of a short barrel type of light stone with three red, narrow bands (H II no. 1754), probably *chalcedony*. (Pl. LXXVI, Fig. 616 a—c).

Four beads are made of *greenish stone* (G III s¹ no. 1434 a; +2.25 m., possibly used as spindle-whorl; G II s² no. 839; +6.00 m., two specimens, one being round and flat with longitudinal string-hole while the other is little, round, flat and has the string-hole running through the *middle* ((Pl. LXXVI, Figs. 617 a—b); F II no. 1275, biconical, damaged bead of greenish, veined stone).

A biconical bead of *yellowish stone* is perhaps to be regarded as a spindle-whorl. (Pl. LXXVI, Fig. 618). The diameter is 2.75 cm., height 2 cm. (E II s³ no. 621; +6.10 m.).

And finally, mention should be made of 4 barrel-shaped beads of *copper wire* twisted in the form of a spiral. Three belong to a necklace from grave F III s² (no. 1435) and one is listed as C II no. 383. (Fig. 619).

It has been found that, in all, 15 prehistoric graves contained beads. Of these graves 3 lay in the earlier layer III, to wit, F III s¹ (no. 1327), F III s² (no. 1435) and G III s¹ (no. 1434 a), but all at heights of between +2.25 and 2.95 m., that is to say, not deepest down. The beads found were of *bitumen*, *white limestone* or *gyps-alabaster*, *greenish stone*, *carnelian* and *copper wire*.

In *layer III* were found a further 16 beads without definite particulars as to the level (A III nos. 534, 590; B III no. 1154, C III nos. 575, 920, 1273; D III no. 513; E III nos. 1682, 1709; F III nos. 1480, 1486, 1567, 1581, 1681; G III no. 1500). Amongst them were two of *lapis lazuli*, two of *alabaster*, one of *bitumen*, a couple of others of *limestone*(?) and the rest of *clay*.

Of the other graves in which finds of beads were made one lay in *II b* (E II s¹⁶ no. 1515), another (A II s⁹ no. 295) in the transition zone *between II b and II a²*. The graves A II s⁵ (no. 68), B II s⁷ (no. 600) and G II s⁵ (no. 1002) lay in *II a²*, G III s² (no. 839) in the transition zone *between II a² and II a¹*, while finally, other graves [C II s² (nos. 245, 269, 273, 274), E II s³ (no. 621), F II s³ (no. 629) and F II s¹ (no. 754), G II s⁴ (no. 958) and H II s² (no. 1763)] belonged to the upper prehistoric layer *II a¹*. The find G II s¹ (no. 744) is more doubtful, even as regards its derivation from a grave.

The beads from the graves in *II b* were of *limestone* (*gyps-alabaster*); in *II a²* of *alabaster*, *bitumen*, *limestone*, *lapis lazuli*, *etched carnelian* and *faience*, in *II a¹* of *faience*, *hard alabaster* and *gyps-alabaster*, *bone*, *green stone* and *yellowish stone*.

It has been possible to give more exact data as to level in connection with a number of loose beads from layer II.

In the transition zone *between III and II b* lay a biconical bead of *light red limestone*(?) (A II 106 no. 380), in *II A²* a *Didacna shell* (A II 20 no. 253), a black *clay bead* (spindle-whorl?) and two *limestone beads* (A II 31 no. 71; C II 51 no. 333; B II 13 no. 218), in the transition zone *between II a² and II a¹* a *lapis lazuli bead* (A II 9 no. 45) and a biconical bead of *black clay* (A II 38 no. 78) and

finally in II a¹ a *glass bead*(?) with three black circles round white middle points (A II2I no. 254) and a cylindrical *faience bead*(?) (C II5 no. 190). (Pl. LXXVI, Fig. 620 a—p).

Some beads of clay and faience, found in layer I, had probably been thrown up from some lower layer.

A comparison with the bead-finds in *Tépé Hissar* shows that in its oldest layer (I) there were beads of *gypsum*, *alabaster*, *black bitumen*, *carnelian* and *copper*. Cylindrical, round, disc-shaped and barrel-shaped beads were commonest.

»New materials for beads introduced during Hissar II are rock crystal, *lapis lazuli*, turquoise, silver and gold» (E. SCHMIDT, Excavations at *Tépé Hissar*, p. 122).

Also *frit* (*faience*) beads made their appearance in different forms during this epoch, and it was not until then that *segmented beads* became known.

One finds the closest agreement with the Shah *Tépé* beads in Hissar III B and C. A new material is offered by the *band-ornamented chalcedony beads*. Snail shells, bone and unburnt clay also occur.

Etched *carnelian beads* do occur, but with other forms and patterns than those of the remarkable bead from Shah *Tépé*.

Spiral ornamented faience beads, *trapezoid gypsum beads* and *rectangular faience beads* with engraving on the long sides remind one, as regards their shape or material, of faience, stone and lapis lazuli beads from Shah *Tépé*. The trapezoid lapis lazuli bead A III no. 590 in Shah *Tépé*, which as to form corresponds to a gypsum bead from period II B—III A in *Tépé Hissar* (H. 2107) and is made of a material that in the last-mentioned place is not introduced until layer II, indicates that layer III (the oldest) in Shah *Tépé* at least partly corresponds to layer II in *Tépé Hissar* (the middlemost). The etched carnelian bead from Shah *Tépé*'s stratum II a² may be contemporaneous with etched carnelian beads in *Tépé Hissar* III C; but it is possibly somewhat older.

As regards, finally, the *rectangular* and *pyramidal faience beads* from the late grave C II s² (no. 269) in Shah *Tépé*, I have found nothing corresponding to these in *Tépé Hissar*. On the other hand, however, rectangular faience beads (spacers) seem to appear in layer III, grave 92 and layer II, grave 80 in *Tépé Giyan*.¹ The material is called by Contenau and Ghirshman »*pâte de verre*» and the form is called »*trois tubes soudés côte à côte*».

In the museum at Baghdad I have seen the same kind of rectangular faience or glassbeads as in Shah *Tépé*. They were described as deriving from Tarkhalan-Nuzi in North Irak and were dated to the period 1800—1500 B. C. (comp.: R. STARR, Nuzi, II Pl. 120 V; I p. 450: Rectangular, ribbed bead, with twisted rope pattern on each rib, green glass). An ivory bead of similar form derives from grave 99 at Zafar Papoura on the Island of Crete.² Amongst the beads of white,

¹ CONTENAU & GHIRSHMAN, Fouilles de Tépé-Giyan, 1935, Pl. VII; 24, 80, 7; 27, 92, 9; p. 61.

² A. EVANS, The Prehistoric Tombs of Knossos, 1906. Pl. XC, 99 a, 8.

green or blue faience from Kizil Vank in Transcaucasia we also find a »spacer» with three stringholes, almost quadrangular with one flat side and the other with three ridges.¹ The pyramid shape of 2 beads or »seals» of faience from C II s² is also found in terra-cotta stamps from stratum VI in Tepé Gawra,² which are dated to the early dynastic period (approximately 3000—2600 B. C.). Such stamp-seals of stone and clay are common in Asia minor and the Balkans and later on they are found in Hungary.³ With the exception of these two »seals» and a truncated conical faience seal, as well as the previously mentioned clay bead A III no. 335, no seals or cylinders at all were found in Shah Tepé, though these are otherwise known from settlements in Iran and Irak and Asia Minor. This is probably due to the fact that the real »seal period» was before Shah Tepé flourished. The seals are numerous in Tepé Hissar I, but they are not unknown, either, in Hissar II A and III, in the younger stratum mostly of copper.

15. IMPLEMENTS OF BONE.

Extensively used in the making of prickers, awls, pins, chisels and dagger-like weapons were the bones of sheep, goats and pigs. For prickers metatarsal and cubitus bones of cattle, sheep and goats were used; the fibula of the pig has been made into pins, and chisels have frequently been made of the tibia, sometimes of the radius. The epiphysis is often missing.

In all, about 170 bone implements were found, 80 of which belong to the Teheran Museum.

At least 14 pins of bone are known. Of these, 4 were found in stratum III (B III no. 930, fragmentary point, F III no. 1383, fragmentary, with square cross-section, E III no. 1596 a and E III no. 1596 (Fig. 621), pins with spherical heads and round cross-section), the rest in stratum II (A II² no. 49, 2 fragments of dark brown colour, C II no 506, E II no. 1544, A II no. 457, 3 pins with triangular heads up of to 12.4 cm. in length, made of fibulae, A II no. 471, a pin of 11.6 cm. in length, with round cross-section, G II s² d no. 837, six fragments of long, thin bone pins with round cross-section of about 0.5 cm. thickness (Fig. 642); one pin is ornamented on its lower part with a hatched transverse band, and above this with 3 hatched angular bands; A II105, no. 368 with square cross-section and 9.9 cm. in length; H II no. 1769 with almost triangular cross-section and thickened »head»; B II no. 795 with round, damaged head). (Pl. LXXVII, Figs. 622 a—g; Fig. 622).

These pins are all narrow, fine and pointed, in several cases polished, with round cross-section, some also ornamented.

¹ A. Spitzyn, *Nekot. Zakavkazskie mogilniki*, Fig. 23, 30 (*Izvestija imp. arch. Kom.* 29).

² SPEISER, *Excavations at Tepe Gawra I.*, 1935, Pl. XXXVII B, 2—b.

³ H. SCHMIDT, *H. Schliemanns' Samml. troj. Altert.* p. 302, no. 8807, 8813. W. LAMB, *Excavations at Kusura* (*Archæologia* LXXXVII, fig. 18, 5), period C, p. 342, fig. 273. CHR. TSOUNTAS, *Op. cit.*, Figs. 272 and 273. HAMPEL, *Altertümer der Bronzezeit in Ungarn*, Pl. LXX 14.

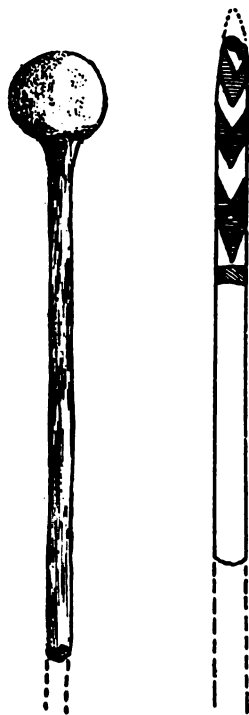


Fig. 621

Fig. 622

Most of the other pointed smaller bone implements may be referred to as *awls*. (Pl. LXXVII, Figs. 623 a—f). They are about 10—15 cm. in length and are not seldom pointed at both ends. A number of them are fragmentary. There are from 55 to 60 of them. The awls are generally made of a cleft bone, and in consequence of this show a groove in one side. They may then be smoothed and polished all over, sometimes even in the groove, but just as commonly it is only the part near the point that is smoothed and polished, while the upper part shows clear traces of splitting and chopping.

A number of the awls show conformity with the chisels in that only a small part of the bone has been split and pointed and otherwise left as it was, though sometimes polished.

Three massive awls are quite or almost round in cross-section (Nos. 1145, 583 and 1176; (Pl. LXXVIII Fig., 624). The middle one was found in A III, the other two in B III, thus in stratum III. A more oval or almost rectangular cross-section also occurs already in this layer

and is still found in layer II together with more irregularly shaped instruments.

A couple of *pointed bone implements* (A II104 no. 367; +3.0 m. and one without number, found in E II) have obviously had shafts and served as *arrow-heads* or perhaps *harpoons* (possibly spear-heads). The one is short and broad with pronounced medial groove and fairly broad, thin base. In the edges are four notches, two and two, opposite each other, evidently to let in binding-twine. One notch is double, or provided with a little ridge in the middle. Several smaller notches that have been begun and left unfinished may be noted. Length 9.7 cm. Greatest width 2.0 cm. (Pl. LXXVIII, Fig. 625).

The other pointed bone implement has in the middle an almost plane-convex cross-section and is 12.8 cm. in length. This, too, has 4 notches near the base, 2 and 2 opposite each other. Between them the base-part has been pierced with a round hole. The edges of the base show also small trial notches. (Pl. LXXVIII, Fig. 626).

A flat, *pointed bone implement* has incisions in the edges and is broken at one end right across a hole. (F II no. 1064). It is possible that this served as an arrow-head or something of the kind. The present length is 8.4 cm., breadth 2.1 cm. (Pl. LXXVIII, Fig. 627).

Possibly of the same kind is a broken off point, formed of a cleft bone, the other end of which has been fashioned into a short, broad, square shaft (E II

no. 935). The present length is 12.09 cm., breadth 3.15 cm., thickness 1.3 cm. (Pl. LXXVIII, Fig. 628).

Mention may also be made of a bent *horn-point* found at +5.90 m. (C II13 no. 226), 11.4 cm. in length. It has been carved with an edged instrument. (Pl. LXXVIII, Fig. 629).

Further, several *tusks of wild (?) pigs* have been found that may perhaps have been put to some practical use (A II, nos. 75, 85, 208, B III, C II).

Mention should also be made here of *three* other comparatively thin and broad *pointed pieces whose use is uncertain* (G II no. 1350 and 2 pieces from E II; (Pl. LXXVIII, Fig. 630 a—b). All of them taper towards the ends, but two are more pointed, while one (from E II) shows an even rounding at both ends (the latter measures 10.65 × 2.05 cm.). The first of these pointed pieces (G II no. 1350), which is 11.6 cm. in length and 2.2 cm. in breadth, has three deeply incised lines, running over the more convex side. The third pointed piece is 14.4 cm. in length, 2.7 cm. in breadth and stouter than the others, so that it was possibly a *thrusting weapon* like the following 7 *pointed bone implements*. One of these (E II no. 945) is only 14.1 cm. long and 2.25 cm. broad, and is provided with a strongly marked groove; but the others vary in length from 15.75 to 20.7 cm. Beautiful and well polished, with oval cross-section and rather tapering face is the 19.65 cm. long point C II no. 478. E III no. 1632 has a broad upper end like a concavo-convex edge, a well polished point, is convexly curved on one side and has a groove-like depression in the other. Length 16.6 cm., breadth 2.4 cm. The other »thrusting» implements are A II102 no. 339, C II97 no. 453, C II no. 483, E II no. 1098. (Pl. LXXVIII, Fig. 631 a—d).

A large group of bone implements comprise *chippers* or *chisels*, that have possibly been used for cutting leather or for chipping out flint-flakes. (Pl. LXXIX, Fig. 632 a—d) At least 68 have been found. The length varies between 8.5 and 18.25 cm., but generally strikes a fair average between these two figures. The chisels are most commonly made of a tibia of a sheep or pig. The upper part of the tibia has generally been cleft, and the remaining half of the tube has been fashioned into an edge. This edge may be straight, crooked, concave or convex, in the latter case sometimes approaching the form of a point. The chisels are often very well polished, as a rule light yellow in colour, sometimes more brownish. One chisel (E I no. 531) is a brilliant black. (Pl. LXXIX, Fig. 633). The breadth of the edge may be as much as 2.4 cm. (E II no. 942). Fourteen or fifteen of the chisels were found in stratum III, the rest, with 3 apparent exceptions, in stratum II.

In a few isolated cases the marrow-free bone is more or less cut off sharp, and forms a *tube* (A III no. 526; Pl. LXXIX, Fig. 634).

Finally, mention may be made of a *bone shaft* to a copper awl. This resembles a pupa, is rounded oblong in shape and divided into 13 segments by means of circumcisions. Length 5.4 cm. (Fig. 635).



Fig. 635

The complete statistics show that in layers II and III there were in all 174 bone objects, of which number, however, some were afterwards weeded out as indefinite artefacts. The distribution was as follows:

A II	24	A III	7
B II	5	B III	8
C II	17	C III	6
D II	4	D III	2
E II	34	E III	20
F II	17	F III	12
G II	11	G III	4
H II	3	H III	—

In addition to these there are 5 objects from A I, C I and E I, which are probably of prehistoric origin.

In all the strata of Tepé Hissar were found bone awls. Chippers, on the other hand, were rare. Four were found in layer I, a single one in Hissar III A. Tubes, regarded by E. SCHMIDT as handles, occurred in strata I and III. Possibly belonging to stratum II was a fire-blackened bone object (H 1681) resembling the segmented shaft from Shah Tepé. Fine pins with incised and black encrusted ornamentation are known from Tepé Hissar III C. Bone objects in Tepé Hissar play an unimportant role as compared with Shah Tepé. I dare say that in Tepé Hissar the sort of implements that have been mentioned here¹ do not amount to more than 21. This shows the predominant importance for the steppe-dwellers to the north of Elburs of cattle-farming. In Tepé Sialk I were found bone implements reminding one of our chippers, but in the cleft part of which a flint knife or pointed flints were inserted. The shaft-part shows the sculptured heads of animals and human beings.² Awls were very common; they were made of metacarpal and metatarsal bones of sheep and gazelles. In stratum II the bone implements become rarer as well as smaller in size. In stratum III horns and bones are used as handles for metal instruments.

Also in Tepé Giyan³ bones were used in the making of pins and awls, but obviously not to any great extent.

In the oldest strata of Tepé Gawra (in stratum VI and deeper) various bone implements occurred («awls, pins, bodkins and needles»). Of especial interest is an object shown on Pl. LXXXII, 15⁴ as «a highly polished ivory pin from Str.

¹ E. SCHMIDT, Excavations at Tepé Hissar, pp. 59, 122 and 222.

² R. GHIRSHMAN, Fouilles de Sialk I, Pl. VII, LIV.

³ G. CONTENAU et R. GHIRSHMAN, Fouilles du Tépé-Giyan, p. 53, Pl. 37.

⁴ SPEISER, Excavations at Tépé Gawra I.

VIII, broken and repaired; it measures 111 mm. in length. The head is in the form of a small knob, and the decoration consists of incised lines arranged in bands and herring-bones». The pin dates back to the Jamdet Nasr period. Similar inlaid ornamentation is also found, as we have seen, on a considerably later pin from Shah Tepé (G II s² d no. 837).

»In the south as in the north Kurgan of Anau objects made of bone were rarely found. Two implements look like arrow-points.»¹ This lack of bone implements in Anau is striking, as the climate and the food resources, especially in respect of cattle and sheep farming, are in fairly conformity with those of the Turkoman steppe. If one turns to Asia Minor one finds that bone implements were comparatively rare in Alaca Höyük.² In Troy were found considerably more than 200 awls of tubular bones³ but only two or three chippers. In Thessaly both these types of implement are richly represented in the late neolithic settlements (TSOUNTAS, *Ai proistorikai akropoleis Dimeniou kai Sesklou*, 1908, Pl. 45).

In many places in Europe, e. g. Italy, Switzerland,⁴ Denmark, Sweden,⁵ the sharpened animal bones were used during the late stone-age as awls and daggers, while chippers are rarer.⁶ Bone pins are — although of other types than those in Shah Tepé — not uncommon; but the period of the more refined bone objects was, as is known, before the copper-age, and in this more remote epoch it was the wild animals that had to supply the material.

16. METAL OBJECTS.

The prehistoric period in Shah Tepé has a comparatively small number of metal objects to show — about one hundred and fifty. These are, however, sufficient to establish the fact that the inhabitants lived in a copper age from the time of the earliest settlement. Besides *copper*, the metals *gold*, *silver* and *lead* are represented, though only by some few objects.

A little closed *copper ring* with a diameter of 1.5 cm., covered with a thin layer of *gold-sheet* was found in grave G II s⁴ no. 959, at +6.60 m., thus in the youngest prehistoric layer. *Silver* occurs much earlier, namely, in the form of two small spiral *rings*, found in the rich grave E III s⁶ no. 1703, at +2.35 m. (Fig. 636). A *lead pin* (C II 78, no. 423; +4.0 m.) with an oblong, flat head derives from stratum II b (Fig. 637).

¹ H. SCHMIDT, *The Archaeological Excavations in Anau*, p. 168.

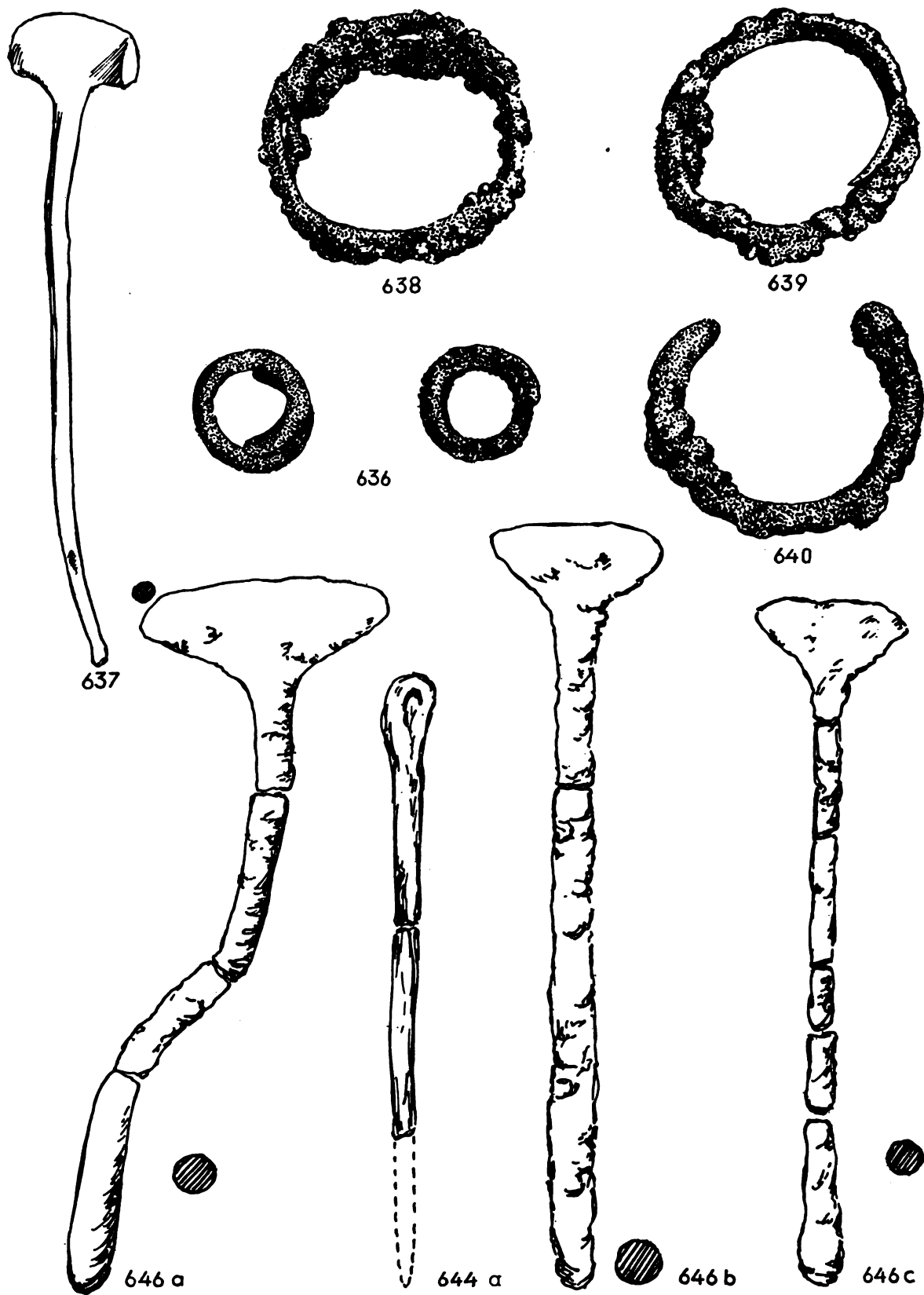
² H. Z. KOŞAY, *Alaca Höyük hafriyatı* 1936, p. 137.

³ H. SCHMIDT, *Heinrich Schliemann's Sammlung trojanischer Altertümer*, p. 304 et seq.

⁴ MORTILLET, *Musée préhistorique*, 1903, Pl. XLII 422—7, Pl. XLIV, 453, 454.

⁵ MONTELIUS, *Minnen från vår forntid*.

⁶ MORTILLET, *Op. cit.*, Pl. LVI, 610.



The other objects are all of *copper*, in a few cases alloyed with another metal.¹ Copper has been used in the production of ornaments, tools and weapons. The different categories of objects will be briefly referred to below.

1. *Arm-bands and bracelets.*

In the oldest layer (III) at least 7 whole or fragmentary arm-bands and bracelets were found; in layer II, on the other hand, only *one* or possibly fragments of another. From the children's graves we have the spiral arm-bands E III s⁸, no. 1733, +2.10 m., and E III s¹⁰ no. 1738, +1.50 m. (Figs. 638 and 639). The former has 1½ coils and measures in cross-section 4.4 × 4.3 cm. In cross-section it has the form of a plane-convex band 0.5 cm. in breadth and 0.3 cm. in thickness. It is probably rather pointed at the ends. As has been mentioned elsewhere, it contains about 1% of lead. The other spiral armband that was found in a grave has 1¾ coils and measures 4.1 and 4.25 cm. in diameter. It is pointed at the ends and seems to be of about the same form as the previous one, possibly rather thicker. In layer E III was also found an open arm-band with round cross-section, 4.6 cm. in diameter and 0.65 cm. in thickness (E III no. 1594). (Fig. 640). A segment of a similar ring, 3.5 cm. in length, derives from the same layer (E III no. 1593). Fragments occurring in D III no. 461, B III no. 1147 and C III no. 1263, probably belong to an arm-band and a couple of bracelets.

The little massive arm-band B II no. 734 probably also belonged to a child. The ends overlap somewhat and are pointed. (Pl. XCII, Fig. 641). The cross-section is circular. This arm-band is 4.05 cm. in diameter and 0.65 cm in thickness. Here, too, analysis has shown a probably unintentional addition of about 1% of lead. Similar arm-bands have been found especially in Tepé Hissar II B but also in Tepé Hissar III, where several, however, have a larger number of coils.

¹ A spectrographic examination of 12 relatively well preserved metal objects from the different prehistoric layers of Shah Tepé has been carried out by A. OLSSON Esq., of The State Historical Museum. Only *one* of these objects (a pin with a faceted head, C II s⁸ no. 271) contained *tin*, namely 8 %, thus of such an order of magnitude that it must have been intentionally added. No other metal besides copper and tin was found in a bronze pin, which belonged to one of the youngest graves (C II s¹). *Lead* could be traced in 10 objects. An awl (C III no. 1262) contained about 6 %, a pin with spiral head (A II no. 281) less than 6 % and the axe-head in A II s⁴ no. 64 more than 6 %. Two spiral armbands (E III s⁸ no. 1733 and B II no. 734) show, besides traces of silver, about 1 % of lead, while somewhat more than 1 % of lead occurs in a blunt pin (E II no. 881). It is likely that lead and silver occurred in the natural state in the copper ore, but such a high percentage as 6 % was conceivably intentionally added to the copper and not merely an impurity. More or less distinct traces of *silver* were observed in all objects except the bronze pin (C II s⁸ no. 271), and slight traces of *antimony*, *arsenic* and *bismuth* were also found in all objects. Zinc, on the other hand, was quite absent. The copper objects from Tepé Hissar at Damghan were very similarly compounded. «Analyses made by Messrs MC NEILL and BRAINERD proved the absence of artificially alloyed tin in the copper objects of all prehistoric periods» (E. SCHMIDT, Excavations at Tepé Hissar, Iran, p. 201).

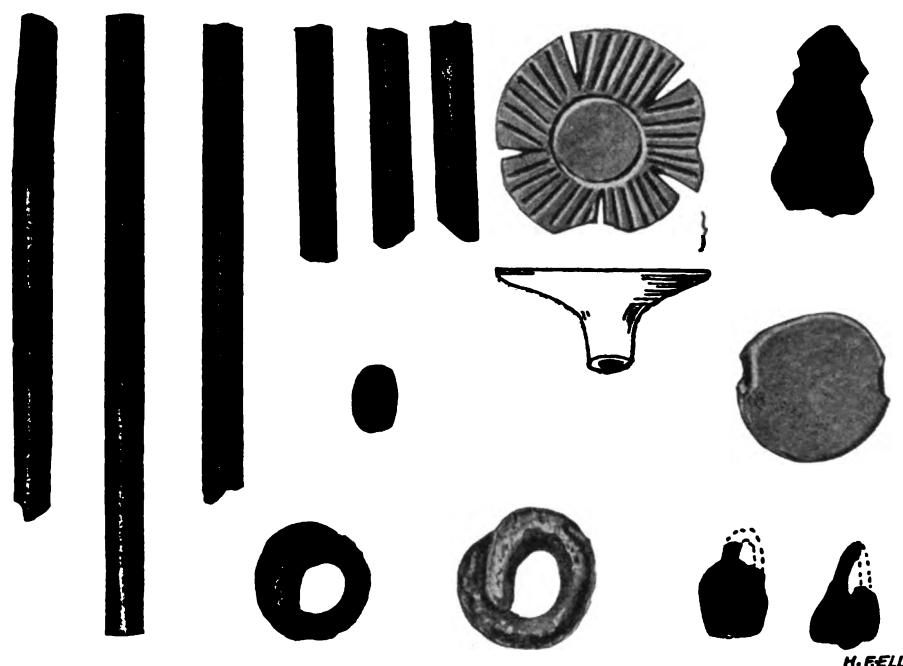


Fig. 642 (G II s²)

2. *Finger-rings, earrings, hair ornaments and beads.*

Fragments that probably belonged to a finger-ring were found in layer III (E III no. 1150). A little open copper ring with a diameter of 1.4 × 1.15 cm. was very likely used as an earring (F II no. 1359). The period of two fragments of earrings found in the transition zone between H II and H I is uncertain. These are a little metal ball with a hole, and a wire bent in the shape of a ring; they seem to belong together (H II no. 1755 and H II¹ no. 1756).

The spiral rings of copper that were found in grave G II s² are probably to be regarded as hair ornaments. In this grave were found, besides clay vessels, bone pins and beads, two little massive rings of round bar with 1½ spiral coils (diam. 1.4 and 1.1 cm.), as well as a couple of pendants consisting of small spirals, extended in the middle in the shape of a flat boat (no. 838; Pl. XCII, Fig. 642 and text-figure). At one, at least, of the ends these have been closed with a tapering, wire-like appendage. Unfortunately, however, these frail pendants have been rather badly damaged. They present a certain analogy with Aunjetitz types in Middle Europe. The grave is, moreover, among the youngest in Shah Tepé.

A fragment of copper wire in the form of spirals (A III no. 833) probably also served as ornaments. (Fig. 643). It is also conceivable that a green patinated ring, square in cross-section and with a diameter of 3.3 cm., is prehistoric, despite its position in layer I (F I no. 659; Pl. XCII, Fig. 643). Mention may also be made here of a spiral-shaped copper bead, 2.65 cm. in length, 0.9 cm. in diameter and with about 20 coils (C II no. 383).

3. Pins and needles.

Only two needles with eyes have been found, both in a fragmentary state (A III no. 833 and A II no. 74; Fig. 644 a, b). Of pins there are about 50, though most of them are fragmentary. As regards the pins, these often occupy an intermediate position between ornaments and implements, whether they were used as hair-pins or for fastening clothes. A sort of pin with blunt and thickened end, thus not suited for sticking through textile materials, is called by E. SCHMIDT (Excavations at Tepé Hissar, p. 194) a »Wand or Symbol». Eight such »wands» were found in Shah Tepé (B II s⁷ no. 569, B II s⁶ no. 570, F II s⁴ no. 1131, C II no. 384, E II nos. 677, 881, 993, 1542), one of which had a half-moon-shaped head (B II s⁶ no. 570; Pl. XCII, Fig. 645 in colour), five others a triangular head (B II s⁷ no. 569, G II s⁴ no. 1131, E II nos. 881, 1542; Fig. 646 a, b, c), one a coiled spiral-shaped head (E II no. 677; Fig. 647 = Fig. 648 with blunt end) while the two remaining heads were indeterminate. Two other »pins» with triangular heads (F III no. 1483 and E II no. 933) possibly had blunt ends originally and were also »wands». It has not been possible to analyse the pin E II 677, preserved in the Teheran Museum, but it is probably not of copper but of lead or silver. In those cases where it has been possible to determine their position, namely, in the graves, they belong to the level II a² or the upper part of II b.

Eight pins have the upper part coiled in the form of a *circle* or incipient *spiral* (A I35 no. 34, A II no. 281, B III no. 1041, C II112 no. 656, C II 18, no. 330, F II no. 1276, F III no. 1591, H I no. 1048; Fig. 648 a—c). The two pins found in layer I certainly found their way there with thrown-up earth. None of the pins with spirals were found in graves, though they have been found in different layers. The »double scroll head» of the kind discovered in Tepé Hissar II (E. SCHMIDT, Excavations at Tepé Hissar Pl. XXIX H 4856) has not been found in Shah Tepé. The simple spiral pins have their equivalents in Tepé Hissar III (»The pin with single loop head», SCHMIDT, ibidem, p. 205, Pl. LIII, H. 3141). In cross-section the pin is sometimes square.

A *round, disc-shaped, verically erect head* characterizes three pins (C III no. 593, C II no. 417, E II no. 1547; Fig. 649). Finally, we have four pins with more or less *bud-shaped heads* (F III s³ no. 1403, F II nos. 1277, 1363, C II s² no. 271; Fig. 650). In the case of the last-mentioned pin, which is of *bronze*, the bud is faceted. (Fig. 651). It is, moreover, unusually long (15.5 cm.) and round in crosssection.

4. Prickers.

The implements here referred to as »prickers» remind one of pins, but they are generally coarser and are as a rule four-sided in cross-section, square or rectangular, sometimes only along half their length, the rest being round in section. (Fig. 652 a, b). They may be pointed or more blunt. In their usual fragmentary state, covered with verdigris, it is difficult to classify them. At least 33 have been found, 7 in



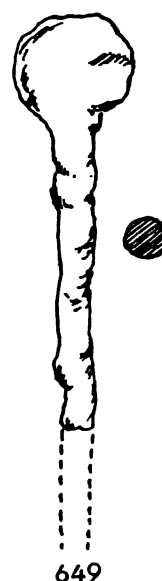
648 a



648 b



648 c



649



651



652 a



652 b



656



650



654

layer III, 26 in layer II and I in layer I, probably thrown up in course of excavation. Only *one* pricker (E II s³ no. 628; Pl. LXXIX, Fig. 653 a) was found in a grave from the youngest prehistoric time.

The longest and best preserved prickers (A IIII b no. 314, C II99 no. 456, C III no. 1262 and F II no. 1360) measure in length 10.5, 11.0, 13.6 and 9.85 cm. respectively. The first of these is rectangular in section, becoming more oval towards the point. The middle is extended and provided with enclosing ridges; the rather defective upper part tapers upwards (Fig. 654). The pricker C III no. 1262, which is rich in lead, has a tapering shaft of about 2 cm. in length, a middle part that is also rectangular in section, and a blunt-pointed end that is oval in section (Fig. 655). I am not quite convinced that the term »pricker» is appropriate for this instrument.

5. *Tacks.*

About ten copper tacks (Fig. 656) were found, a couple of them being discovered in the deep grave A III s⁴ (no. 414; —0.60 m.). The actual tack was generally broken off. F II no. 1361, however, comprised both head and tack. The diameter of the former was 1.4 × 1.3 cm.; the bent and broken off tack was 3.95 cm. in length. The diameter of the tack-heads varied from 0.65 cm. to 1.5 cm. Three were found in layer III (A III s⁴ b no. 414, 2 specimens; F III no. 1484), five in layer II (B II nos. 594, 794; C II nos. 349, 584; F II no. 1361), two in layer I, where they had certainly been thrown up in the course of a recent excavation (D I2I no. 324; H I no. 1026). Similar tack-heads were found in Tepé Hissar, especially in the youngest layer (stratum III). »Since one pair at least was found beside the legs of a skeleton, we may assume for the present that they were used as ornamental pieces for sandals or shoe-strings» (E. SCHMIDT, Excavations at Tepé Hissar, p. 206).

6. *Copper-sheet, vessels.*

In one grave (E III s⁷ no. 1731) and in six places outside graves was found sheet-copper that at least in some cases must be regarded as being remains of hammered copper vessels. (Pl. LXXIX, Fig. 657). So in E II no. 592 there are 15 fragments of a somewhat bellied copper vessel, and copper-sheet remains in grave E III s⁷, to the number of about 40, probably belonged to a little vessel. In Tepé Hissar II one copper vessel seems to have been found; these were more common in Hissar III B and C. The shapes are often the same as those of clay vessels (E. SCHMIDT, Excavations at Tepé Hissar, p. 210).

7. *Spearheads or dagger blades.*

A couple of copper blades with short tang were found, namely, C II no. 160 (Pl. LXXIX, Fig. 658) and A II83 no. 232. (Pl. LXXIX, Fig. 659). The former, together



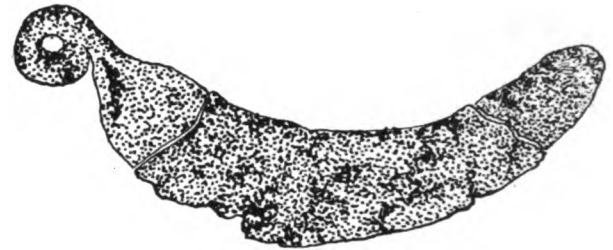
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661 b



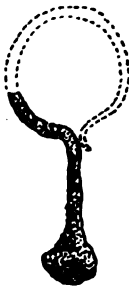
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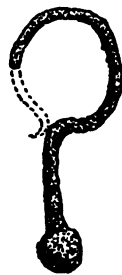
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661 a



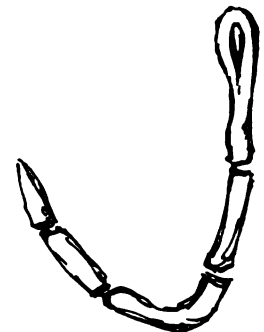
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676



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644 b

with its short broad tang, has an ovally rhomboid form, a length of 9.75 cm. and a breadth of 3.6 cm. The latter is more lancet-shaped, with a broad, rather rounded base and short tang. The length is as much as 23.3 cm., and the greatest breadth 4.8 cm. This blade lay at +1.30 m., thus in the transition zone between II b and II a. A fragmentary copper blade contained traces of silver and lead (C III4 no. 651).

8. *Knives.*

Completely intact is a little single-edged half-moon-shaped »razor» with a handle coiled in the form of a circle (Fig. 660 and Pl. LXXIX). The length is 8 cm. This knife, F II2 no. 786, was found at +6.60 m., thus at a very high level, and belongs to the youngest prehistoric finds. E III6 no. 1248 is also to be regarded as a knife with bent back (Fig. 661 a, b). It is 10.85 cm. in length. We have, further, fragments of 7 knives (in a couple of cases possibly spearheads) (A III no. 527, E III no. 1344, F III no. 1378, A II58 no. 142, A II8 no. 42, F II no. 978, E I no. 533, the latter probably thrown up from an older layer). It would seem that they were often two-edged.

9. *Chisels.*

A little straight-edged copper chisel (or narrow axe) of copper with traces of silver and lead (C II no. 554) derives from layer II (Pl. LXXIX Fig. 662). The narrow sides are oval with pointed ends. The length is 7.0 cm., breadth 1.9 cm., thickness 1.1 cm. This object is probably to be regarded as a tool, not as a weapon.

A fragment of a copper chisel (A II5 no. 96) was found at +5.4 m. which level actually belonged to the upper part of the prehistoric layer.

10. *Miniature mattock (axe adze).*

In the grave A II s⁴ (+4.10 m.) was found, besides three clay vessels, a little miniature mattock of copper with handle of the same metal (A II s⁴ d no. 64; Fig. 663.) The copper was alloyed with more than 6% of lead, and slight traces of silver were also observed. The axe-edge is parallel with the handle, the blunt hammer-edge is at a right angle to the axe-edge. The neck of the hammer is rather broken and bent downwards and may perhaps be regarded as the neck of an adze. The prototype of the mattock is a double axe-head with hole for handle with straight and transverse edges. Length 2.8 cm. Length of handle 3.1 cm. The end of the handle is pierced with a string-hole for suspension.

A similar miniature mattock has been found in Tepé Hissar III C, that is, in the youngest prehistoric layer (E. SCHMIDT, Excavations at Tepé Hissar, p. 205, Pl. LII, H. 2793).

II. *Fragments.*

Besides the groups of determinable objects mentioned above and some spiral beads, about 40 copper fragments were found loose outside the graves. One fourth of these were found in layer III, distributed among four finds, and the remainder in layer II, comprising 14 finds. Fragments were found in all shafts, from A to H. Mention may be made of a copper nail with damaged head, length 1.9 cm. (E II no. 1543) and a smelted »drop» (H II no. 1758).

Of all the copper objects scarcely a dozen were found in graves, and in these cases they were generally ornaments, not weapons or actual tools. The copper is sparse but occurs in all layers. No bronze pins were found before the youngest layer. Although weapons and cutting implements were rare, one may nevertheless affirm that the inhabitants of Shah Tepé lived in a *copper age* and possessed an *eneolithic culture*. The metal objects will be further discussed in connection with the question of dating.

RELATIVE CHRONOLOGY.

It is evident that the Turkoman steppe to the north of the Elbruz chain and to the east of the Caspian Sea has formed a special province in the wide sphere of painted pottery. Its boundary to the north and east, indeed, even along the southern coast of the Caspian Sea, is as yet unknown. The material has been supplied chiefly by Shah Tepé; but the stray sherds from Tureng Tepé and about twenty other tepés bear witness to a uniform culture. This painted pottery is *not*, however, like that of the Iranian plateau, the *only* pottery found in older times: it shares its dominion from the outset with the black and grey ceramic.

This latter Shah Tepé pottery has in its older stage complete counterparts on the steppe; but its occurrence on the high plateau, i. e. in Tepé Hissar, is very slight, there being only some few specimens of an older type in stratum II (of T. H.) On the other hand, the region for the grey pottery gradually extends towards the south and west, and the temporal and spatial boundaries of the resulting province cannot yet be definitely determined.

An attempt will here be made, chiefly on the basis of the occurrence of different ceramic forms in the different layers, to give a relative chronology for Shah Tepé. It has been possible to observe five periods and layers, viz., counting from above, I, II a¹, II a², II b and III. Layer I is Mussulman; the others belong to the copper age. Between II b and III one can observe a transitional layer. (Fig. 664).

A comparison with Tureng Tepé and with Tepé Hissar is here of great interest. Mound C in Tureng Tepé runs parallel with Shah Tepé from its commencement in stratum III and continues to and including II b. II a is not at all or only slightly represented in Tureng Tepé's mound C. It is possible, on the other hand, that mound A is in part of later date, and perhaps also earlier.

Tépé Hissar shows two early periods A I and I B, that are not at all represented in Shah Tépé. Only when I C is reached do we find a number of agreements between Tépé Hissar and layer III in Shah Tépé. The younger parts of Shah Tépé III and the transition period to II b correspond to Tépé Hissar II A and II B. Shah Tépé II b is essentially contemporaneous with Tépé Hissar III B, but in some degree also with III A. And finally, to the two periods Shah Tépé II a² and II a¹ corresponds only Tépé Hissar III C.

A brief but more detailed comparison between the finds from the three localities Shah Tépé, Tureng Tépé and Tépé Hissar gives the following result:

The clay vessel forms in Shah Tépé II a¹ — oval canteens with lugs for suspension, cooking pitchers of coarse ware with handle, the big, hemispherical bowls with wide, trough-shaped spouts, symmetrically oval bottles with high necks — are missing in Tureng Tépé but are found in Tépé Hissar III C. The alabaster vessels are most numerous in Shah Tépé II a¹, but occur in smaller numbers in II a²; a single vessel was found already in II b. In mound C of Tureng Tépé these vessels are not found at all, but they are very characteristic of Tépé Hissar III C. Red pottery (without black painting) appears both in Shah Tépé and Tépé Hissar III C. In Tureng Tépé there is mention only of a deep bowl with lugs of red earthenware, obviously belonging to a somewhat older stage. The upper limit for the prehistoric layers in Tureng Tépé lies at about +106 — +107 m., where 100 marks 0 — the point constituting the high-water level of the nearby pond. Above +106 — +107 there is a time lacuna; the Mussulman stratum seems to begin rather soon, as in Shah Tépé, where it merges into the purely prehistoric layer. Clay vessels in the form of a female torso have been found in Shah Tépé II a¹ and in Tépé Hissar III C, as also bone pins with ornaments encrusted in black.

There is thus no doubt that Shah Tépé II a¹ is contemporaneous with Tépé Hissar III C, but is missing in Tureng Tépé. But also Shah Tépé II a² shows close agreement with Tépé Hissar III C. This appears from the fact that globular bottles, globular spouted jugs, tall cylindrical vessels, handled vessels, alabaster vessels, mace-heads, blunt copper pins (wands) and carnelian beads with white patterns occur in both. But the agreement in pottery is not at all complete: Both layers have their own specialties. Shah Tépé lacks, moreover, in the hitherto examined shafts, the cylinder seals that were discovered in both III C and III B of Tépé Hissar and also the older stamp seals from strata I and II of the latter finding-place. Gold belongs in Shah Tépé to a later epoch (II a¹) than in Tépé Hissar (already in layer II, although extremely sparsely). A little miniature axe of copper that in Shah Tépé belongs to II a² is, certainly, also found in Tépé Hissar in III C, but in a somewhat diverging form already in III B.

In strata III C and III B Tépé Hissar has several spear-heads, lances and daggers of special forms, that are not known from Shah Tépé (Pl. LXXX, Fig. 665 a, b).¹ They

¹ E. SCHMIDT, Excavations etc. Pl. L and LI, p. 201, 202.

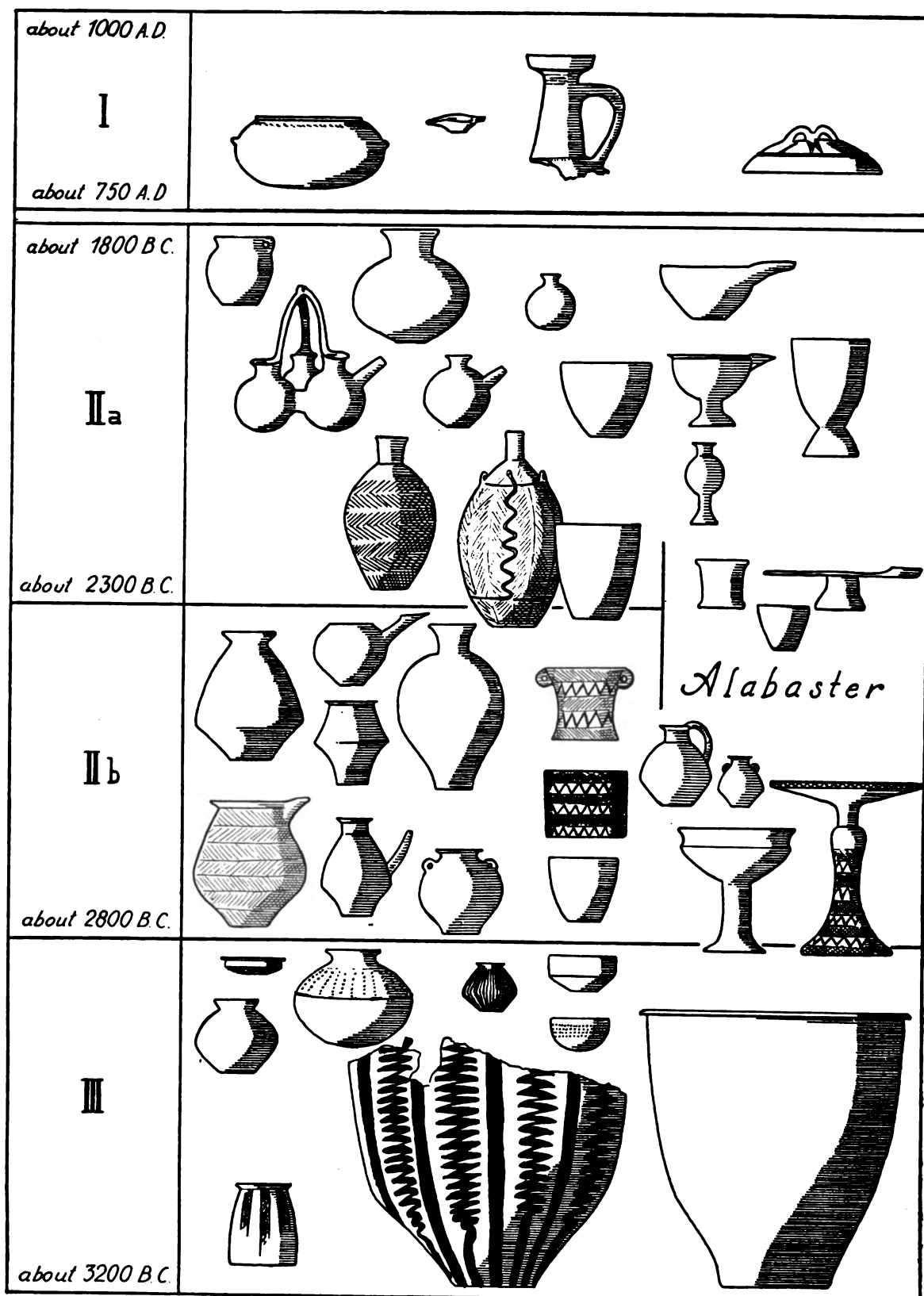


Fig. 664

have long lancet-like or elliptical blades with medial ridge and a shaft-stem bent at right-angles and ending in a button. In some cases the blade continues downwards as a slightly contracted cylinder, that ends with a rod-like stem, provided with a button. Similar weapons were found in graves in Tureng Tepé¹ at a depth varying between 102.60 and 104.10 (Pl. LXXX, Fig. 666). These types of dagger and spearhead are known from Cyprus² and are dated to Early Cypriot II—III.

The longer type of spearhead is known also from Ras Shamra in northern Syria.³ SCHAEFFER refers them to the »deuxième niveau, partie inférieure» (XXI—XIX centuries).

Another form of dagger with a long, elegant blade with middle ridge and in-curving sides is found both in Tepé Hissar III B⁴ and in Tureng Tepé (Pl. LXXX, Fig. 667).⁵ These finds of weapons are already an indication that at a certain level, up to 104.10, Tureng Tepé corresponds to Tepé Hissar III B.

Mention may be made of the fact that in the same grave-layer in Tureng Tepé a »cross-shaped» copper celt was found, that may thus be dated to the period about or before 2000 B. C. (Fig. 666). S. PRZEWORSKI has characterized this type of celt (D) as East European-Anatolian, otherwise unknown in the Near East and probably to be dated to the Hallstatt period.⁶ A mould from Hissarlik VII b (according to BLEGEN 1200—900 B. C.) was employed in the manufacture of such celts. PRZEWORSKI assumes »ein Übergreifen europäischer Formen nach Mittelanatolien». Obviously, the distribution of this type occurred in the opposite direction and at a much earlier stage than P. supposes — once more an illustration of the difficulty of a reliable dating in the Orient if allowances are not made for the strong conservatism of the East and our lack of sufficient material for study.

In Tureng Tepé, from the layer above the weapon-graves (106—104.50), were found a number of male and female statuettes of clay, some brown and some black. Among the latter a female statuette was found in a grave, 104.55. Several brown statuettes were discovered at the level 105.80. From Shah Tepé we have a fragmentary black female statuette in layer II b and a brown one from the lower part of layer II a². Tepé Hissar has only one more or less naturalistic female torso of light grey-brown colour; and this (H 3644) was found already in stratum II A.

The upper part of Tureng Tepé's layer 106—102 thus corresponds to the transition-zone between Shah Tepé II b and II a². The greatest part of the pottery with its cylindrical vessels, deep bowls, biconical carinated jars, oval globular jars with string-holes and bottle-pitchers, however, is contemporaneous with Shah Tepé

¹ WULSIN, Op. cit. Pl. XX, p. 12, two fig. to the right.

² GJERSTAD etc. Swedish Cyprus Expedition. I, Plates, Pl. 142,8 302 A, 307 A, etc, from Lapithos. Cf. SCHAEFFER, Missions en Chypre 1932—1935, Pl. XXIII, 1, 4. Fig. 16,3.

³ Cf. SCHAEFFER, Op. cit. Fig. 16,3.

⁴ E. SCHMIDT, Op. cit., Pl. L, H 2023, 2024, p. 201.

⁵ WULSIN, Op. cit. Pl. XX, second fig. from the left.

⁶ St. PRZEWORSKI, Die Metallindustrie Anatoliens in der Zeit von 1500—700 vor Chr. p. 31, Pl. VII, 5. (Int. Archiv f. Ethnographie, Bd XXXVI, Suppl.).

II b, although the bottle-pitchers or carafe-shaped bottles in general diverge somewhat in form from the isolated specimens known from Shah Tepé.

Tepé Hissar's grey-black pottery during the corresponding period III B diverges to some extent from that of the steppe, but it includes many specimens of the bottle-pitchers that are similar to those of Tureng Tepé. Biconical jars with open, trough-shaped spout are also found, as are simple, low cylindrical vessels and spouted bowls (H. 5089) related to the oval-globular jugs that one finds in Tureng Tepé (Pl. XI, 2) and Shah Tepé II b (no. 1127 F II s⁴, no. 377 C II—64).

The dipper-type appears both in Shah Tepé II b and in Tepé Hissar III B. The typical »pseudo-cylindrical» vase with burnished ornaments that is so common in Shah Tepé II b is found in only one unique specimen in Tepé Hissar, and has here wandered up to III C.

A stone celt and a copper chisel derive from Shah Tepé II b. Stone celts were common in Tepé Hissar from period II onwards, while no similar copper celts were found there, although they occur in stratum I C. In Tureng Tepé two polished stone axes were discovered, presumably also in the layer 106—102.

It is probable that Shah Tepé II b is of fairly long duration and corresponds also to Tepé Hissar III A, that has the character of a transition period. The investigation in Tureng Tepé was too little comprehensive for one to be able to express any opinion about the layer between 102 and 98, but it must certainly correspond to some parts of Shah Tepé II b and III. The bottle-pitchers began already in Tepé Hissar III A, and here, too, was found a little jar (H. 5124) with engraved lines, obviously a survival from II B.

The last-mentioned stratum probably corresponds most closely to the transition period between II b and III in Shah Tepé.

This period is characterized by fruit-stands with high stem and conical foot, by certain chalices, biconical jars with trough-shaped, deep, open spout and remains of unpainted, knobbed, ribbed and corrugated ware, especially the latter. It now appears that Tureng Tepé at a comparatively low level — 102.20 — contained a grave with a stemmed chalice.¹ Outside the graves was found a stemmed lamp of grey burnished ware,² closely conforming with a fruit-stand from Shah Tepé (no. 1166 E III 3). Also a biconical jug with long, tubular spout, provided with three strainer holes was found in a Tureng Tepé grave. In Shah Tepé, similar jugs are found in E III s¹ and E II s¹⁹ at +2.35 and +3.00 m. respectively, thus also during a period of transition.

»Incised, ribbed and bossed grey ware became more common as we dug deeper», says WULSIN; »the best pieces came from out two burials at 96.7 to 98». This agrees precisely with the conditions in Shah Tepé.

¹ WULSIN, Op. cit. Pl. XI,3.

² WULSIN, Op. cit. Pl. XIII,3.

In Tepé Hissar II B we find a storage jar of grey ware (H. 1822), provided with seven corrugations on the upper body (cf. Shah Tepé C II s¹⁴). Two jars (H. 4783 and H. 5118) are ornamented with rows or groups of small knobs and ridges. These three vessels alone represent in Tepé Hissar a type that both in Tureng Tepé and in Shah Tepé chiefly belongs to an older stage (Shah Tepé III), but that has also been collected in the form of sherds in the next highest, younger layer (II b). The fruit-stands of grey ware (also with rings around the stem) are very characteristic of both stratum II B and stratum II A in Tepé Hissar, as are also different kinds of chalices. The types are found in the previous periods as painted pottery. Copper bracelets of coiled wire are not uncommon in the graves of Tepé Hissar II B, but do not appear earlier. In Shah Tepé these bracelets belong in part already to the older portion of stratum III.

This is not the only case in which a prehistoric object appears later in Tepé Hissar than in Shah Tepé. So, for example, a mould for the manufacture of copper mattocks was found in Tepé Hissar II B, while a similar mould for the manufacture of copper hammers derives from Shah Tepé A III (no. 591). It may possibly be said that the hammer with a shafthole in one end (Shah Tepé) is more primitive than the axe-adze with shaft-hole in the middle (Tepé Hissar).

Earrings and small scroll-pendants of silver were discovered in Tepé Hissar II A. In Shah Tepé such silver earrings belong to the upper part of stratum III (no. 1703 E III s⁶). The time probably agrees fairly well. Copper daggers and blades of simple forms belong to Tepé Hissar II A and I C. One is probably justified in saying that the dagger-blade Shah Tepé no. 232 A II 83 is fairly closely related to the Hissar IC type (H. 3408), although it was found in the upper part of Shah Tepé II b.

In Tepé Hissar there survived certain simply painted clay vessels over the whole period II, indeed, even into period III A. During period II A it is as if the painted pottery in a number of cases suddenly showed likenesses with the much earlier period Hissar I A. »The designs of some Hissar II A vessels», says SCHMIDT,¹ »strikingly resemble the patterns of the earliest painted ware of Hissar I A, and the colour scheme is also identical». We have, as I have shown before (page 250), reason to believe that this atavistic phenomenon is caused by influences from the steppe in the north. Hissar II B and II A show points of contact with Shah Tepé III. But chronologically, Shah Tepé III is in certain respects most strongly connected with Hissar I C. Mound C in Tureng Tepé also shows, in its oldest known layer (96—98), chronological connection with these layers. Such painted patterns as the vertical zig-zag lines, the rows of dots and the rather irregular concentric circles that we see on jars and chalices from Hissar I C² are found also in Shah Tepé III (Figs. 295—297). And precisely the form of *ibex with rosette* that is so typical

¹ E. SCHMIDT, Op. cit. p. 303.

² E. SCHMIDT, Op. cit. Fig. 41, 42, 43.

of Hissar I C¹ was found in Shah Tepé A III, and forms a good point of departure for the relative chronology (Fig. 299).

In the Shah Tepé III the grey and grey-black pottery appears earlier than in Tepé Hissar; and, as has several times been remarked, it is in this layer III, as also in Tureng Tepé 96—98, that the knobbed and ribbed ware in the form of jars and cups have their primitive origin.

Beads of carnelian and lapis lazuli are not much later in Shah Tepé than in Tepé Hissar. Lapis lazuli is first found in Tepé Hissar during the period II A. Disc-shaped carnelian beads were found already in Shah Tepé F III s¹, and some specimens are known from Hissar I C. The most interesting of the carnelian beads in Shah Tepé is of course the one with etched ornamentation that was found in grave B II s⁷ (+4.60 m.), thus in stratum II a² (Fig. 615, page 289). The etched carnelian beads from Hissar III C have another shape and pattern, and cannot so easily be matched with the beads from Ur and Mohenjo Daro. The dating for the Ur beads is decisive for the carnelian bead from Shah Tepé — the centuries round about 2500 B. C. are so far to be regarded as the most probable.

ABSOLUTE CHRONOLOGY

Several attempts have been made with the help of comparisons with finds from Mesopotamia, Syria and Asia Minor to set up an acceptable chronology for prehistoric Iran. Dr E. SCHMIDT is rather cautious in his last work (*Excavations at Tépé Hissar, Damghan*, p. 320) in the matter of absolute dates. He gives, however, as the approximate beginning of the period Hissar II A, 3500 B. C., according to which the peak-period of the painted ceramic, the periods I A—I C, should belong to an earlier epoch, and perhaps date its inception to about the year 4000 B. C. or the 5th millenium. SCHMIDT also parallelizes the oldest part of Tureng Tépé with the younger half of Tépé Hissar I C, with which I am in complete agreement. SCHMIDT bases this dating on the occurrence of the so-called proto-Elamite tablets in the layer belonging to Tépé Sialk's period IV. The preceding period, Sialk III, agrees in the whole of its cultural habitus with Tépé Hissar I C, and to some extent with I B.

Professor HERZFELD once gave as the date of the proto-Elamite tablets the Jamdet-Nasr period in Mesopotamia,² a dating with which SCHMIDT agrees. He considers the periods VI—VII in Tell Billa to be contemporaneous with Jamdet-Nasr.

The period of the proto-Elamite tablets is assumed by SCHMIDT to correspond to Hissar II A and II B. In Elam itself (Susa) one may place these tablets at the

¹ E. SCHMIDT, *Op. cit.* Pl. XII D G—69, 6, 7, X, H 802.

² HERZFELD, *Archaeologische Mitteilungen aus Iran*, V, 2, p. 60.

beginning of Susa II. »Since the proto-Elamite layer, superimposed on Hissar I C and part of the exasperating Susa II, are contemporaneous with Jamdet Nasr, it follows that the southern Mesopotamian strata preceding Jamdet Nasr, that is Uruk and Al'Ubaid and the deposits underlying Susa II (Susa I »bis» and Susa I) are at least contemporaneous with Hissar I A to I C».¹

And finally, SCHMIDT draws comparisons between Hissar III C with its stemmed alabaster vessels and Early Dynastic Sumer.

»In the chapter on Hissar II A we traced the newly arrived grey ware to the Turkoman steppe in the north. We postulate, therefore, the existence of grey ware in the northern steppe prior to Hissar II A.»² This assumption of SCHMIDT's is very probable. I have tried to show that the grey pottery appears in Shah Tépé already during Hissar I C. SCHMIDT adds: »We are inclined to attribute the end of Hissar III to the end of the Copper or Bronze Age, that is, the first half of the second millenium B. C., but an earlier age may be indicated.» In »A Survey of Persian Art», in the chapter »The early cultures of Damghan», ROGERS WARREN writes: »Accepting for the present that the duration of the period of Hissar II with its sub-phases A and B was about 1000 years, Hissar II A and B may be tentatively placed between 3500 and 2500, and Hissar III with its sub-phases, A B and C between 2500 and 2200 B. C.»

In his work »Fouilles de Sialk, I »(p. 83) R. GHIRSHMAN mentions that the first proto-Elamite tablets are to be found in the younger layer of »la couche intermédiaire» in Susa and already at the beginning of Tépé Sialk IV. The earlier transitional phase from Susa I to II is lacking in Sialk, and from this GHIRSHMAN draws the conclusion that this intermediate Susa-civilization (by GORDON CHILDE also called Susa C = Uruk IV)³ has spread from the periphery to the centre of the Iranian plateau, where it appears at a later date than in Susa. The later transitional layer from Susa I to II is compared by GHIRSHMAN with Sialk IV and Jamdet-Nasr; but already in Sialk IV he finds 2 ceramic counterparts to vessels in the archaic dynasty in southern Mesopotamia.

As regards the absolute chronology, GHIRSHMAN shares the view according to which the Jamdet-Nasr period and therewith also Sialk IV, 1 fall in the period between 3200 and 3000 B. C., while Sialk IV, 2 is taken down to about the year 3000 B. C. Tépé Sialk III and therewith also Tépé Hissar I C and a part of Shah Tépé III should therefore according to this calculation, be dated to just before 3200 B. C. SCHMIDT's and GHIRSHMAN's absolute chronologies thus differ here by at least 300 years.

Tépé Sialk III, Tépé Hissar I C and layer III in Rey (counted from below) show such close conformities that GHIRSHMAN is tempted to relegate this section of the

¹ E. SCHMIDT, op. cit., p. 324; cf. R. DE MECQUENEM, Mémoires de la Mission archéologique en Perse, XX, p. 101.

² E. SCHMIDT, op. cit. p. 325.

³ Susa I bis = Susa a, Susa I = Susa b, Susa couche intermédiaire = Susa c, Susa II = Susa d.

central part of the plateau to a special region. It is evident that the conformities in question begin even earlier. It is probable that the peoples represented in these layers are also ethnically related. Another region is formed by the western and south-western parts of the plateau, with Tépé Giyan, Moussian and Susa.

GHIRSHMAN has further pointed out a region in Persepolis and the province of Fars, with pottery contemporaneous with Susa I. It extends as far as the Makran region in the east, where the Beludjistan region begins.

On the Turkoman steppe we find still a fourth (or fifth) region, corresponding chronologically, more or less, to the older Susa II and Hissar I C, with Shah Tépé and Tureng Tépé as examples. There occurs here a special sort of painted pottery geometrical with vertical pattern in black on red. But there appears at the same time a black or grey pottery, often with burnished ornaments in horizontal zones; and this extends later (during Tépé Hissar's period II) over Elbrus to reach Tépé Hissar. The regional scope is thus changed and extended.

In Tépé Giyan in West Iran there have been noted five layers,¹ whose chronology has been given by CONTENAU and GHIRSHMAN as follows:

Layer V is the oldest, corresponding to Susa I bis and I, and thus also to al 'Ubaid in Mesopotamia. It is to be dated to before 3000 B. C. Layer IV is contemporaneous with Susa II. The «Couche intermédiaire» (= Uruk IV—V) between Susa I and II is not found in Giyan. Nor is the Jamdet-Nasr period (= older Susa II) notably represented in Giyan, where the style of Susa I goes over to the younger Susa II without transition. Layer IV is dated to 3000—2500, layer III to 2500—1800, layer II to 1800—1400 and layer I to 1400—1100. DE MECQUENEM, who has carried out comprehensive excavations in Susa, is of another opinion,² and states that Giyan V must be dated to before 2800; layer IV, according to him, falls between 2800 and 2000 (1900), layer III between 1900 (2000) and 1400, layer II between 1400 and 1000 (900), while layer I goes back to the period between 1000 (900) and 300 (200) B. C.

R. GHIRSHMAN³ gives the beginning of Giyan V the same date as Sialk II and the beginning of Sialk III. The end of Giyan V and Sialk III 6—7 are contemporaneous, and with them also Hissar I C, mound A in Persepolis and Susa I.

DE MECQUENEM⁴ gives the historical period in Susa as beginning with the Awan dynasty (XXVIII—XXV centuries), whose eighth regent, Loukhichan, was a contemporary of Sargon in Agade (at the latest about 2500). Thereafter come the Simash dynasty with 12 kings (XXV—XXIII centuries) and the UrIII dynasty (XXIII—XX centuries) whose last king was Ibi Sin, who was defeated by his Governor in Elam, Koutir-Nakhounte.

¹ CONTENAU et GHIRSHMAN, *Fouilles de Tépé Giyan*, 1935, p. 79 et seq.

² R. DE MECQUENEM in «*L'Anthropologie*», Tome 48 (*Fouilles préhistoriques en Asie occidentale*, p. 63 et seq).

³ R. GHIRSHMAN, *Fouilles de Sialk I*, p. 94.

⁴ R. DE MECQUENEM, *Fouilles de Suse*, 1929—1933 (*Mém. de la mission archéol. en. Perse*, XXV).

Then followed the Hammurabi period (XX—XVII centuries); ALBRIGHT and others date the Hammurabi dynasty from 1800 to 1600 B. C. (Bull. of the American Schools of Oriental research 1938 and 1940; SIDNEY SMITH, A preliminary account of the tablets from Atchana, The Antiquaries journal, jan. 1939).

As regards the prehistoric cultures, DE MECQUENEM seems to be of the opinion that the Susa II period goes back to the XXXVth century, to judge by his dating of a large grave and depot find contained in two clay vessels of Susa II type.¹

In northern Mesopotamia the investigation of the important sites of Tépé Gawra and Tépé Billa has led to the establishment of both a relative and an absolute chronology.

Tépé Gawra IV—V constitutes the old Assyrian period and corresponds to Billa IV a—c; Gawra VI = Billa V, Ashur G, Kish A and Ur early cemetery; Gawra VII = Billa VII—VI, Jamdet-Nasr, Uruk II—III, Niniveh V and Hissar I C; Gawra VIII = Niniveh III and IV, Uruk V—IV² (VIII A = beginning of Jamdet-Nasr period). Behind this lies Gawra IX—XI = Uruk period, XII—XIX = 'Ubaid period, XX—XXV = Tell Halaf period and XXVI neolithic period. SPEISER dates Gawra IV to the period for the third dynasty in Ur (about 2250 B. C.); Gawra V—VI to the time of the Sargonid dynasty about the year 2550 B. C.; Gawra VII to the beginning of the Early Dynastic period and the end of the Jamdet-Nasr epoch, that in its beginning falls under Gawra VIII A.

The excavations in Alişar in the eastern part of Anatolia have yielded a comprehensive material, that ALBRECHT GÖRZE³ dates as follows: Eneolithic layer, 3000—2700 (= the greater part of Troy I), Alişar I, 2700—about 2200 (= the end of Troy I and Troy II); Alişar III, about 2200—2100; Alişar II about 2100—2000. Assyrian commercial colonies are dated to about 2000 in the eastern part of middle Anatolia, and to these belong the co-called cappadocian clay tablets with cuneiform writing. Then followed, in the 20th century, the founding of the older Hittite kingdom. It was still in existence in the 17th century, when for a century and a half it was followed by the Hurrites. The dating given by K. BRITTEL⁴ (1934) to Alişar seems on the whole to agree with GÖRZE's.

The *Swedish Cyprus expedition* has for this island worked out the following chronology as regards the stone and bronze ages:⁵

¹ R. DE MECQUENEM, op. cit., p. 139.

² A. SPEISER, Excavations at Tépé Gawra (1935), pp. 174—183.

A. SPEISER, The Pottery of Tell Billa, The Museum Journal XXIII, 3, 1933. (Billa VII—VI: 3200—2900; Billa V: 2900—2700; Billa IV (= Anatolian period: about 1900 B. C.).

³ A. GÖRZE, Kulturgeschichte des alten Orients 1933, p. 199.

⁴ K. BRITTEL, Prähistorische Forschung in Kleinasien, 1934, p. 14, cf. Archiv für Orientforschung, 13.

⁵ Kindly communicated by DR ALFRED WESTHOLM.

Stone age

Pre-ceramic I

Painted pottery II

Red polished III

Bronze age

Early Cypriote I—III	2800—2100 B. C.
Middle Cypriote I	2100—1900
» » II	1900—1750
» » III	1750—1550
Late Cypriote I	1550—1400
» » II	1400—1200
» » III	1200—1075

P. DIKAIOS¹ has tried to give a more exact dating to the sections of Early Cypriote, arriving at the result that the end of Early Cypriote I (I C) includes the period 2600—2500 B. C.

II, the period 2500—2300

III, » » 2300—2100.

The latest and most reliable chronology for Troy has been given by CARL W. BLEGEN,² as follows:

Troy I	3200—2600 B. C.
II	2600—2300
III	2300—2200
IV	2200—2050
V	2050—1900 (= Middle Minoan I)
VI	1900—1300
VII a	1300—1200
VII b	1200—900
VIII a	900—550
VIII b	550—350
IX	350—400 A. D.

An important finding-place is the town Thermi excavated on Lesbos by W. Lamb.³ Its chronology is as follows:

¹ P. DIKAIOS, The Excavations at Vounos-Bellapais in Cyprus 1931—2, (Archaeologia 1940).

² C. W. BLEGEN, New Evidence for Dating the Settlements at Troy (The Annual of the British School at Athens, No. XXXVII, 1940).

³ W. LAMB, Excavations at Thermi in Lesbos, 1936, p. 211.

Thermi V	about 2400 B. C. (before the end of Troy II)
IV	2800 or 2700 — ?
III A and B	3000—2800 or 2900—2700
II }	3200—3000 or 3100—2900.
I }	

The same writer has also investigated a prehistoric community at Kusura near Afyon Karahissar.¹

A	Beginning of 3rd millenium B. C.
B	XXth century B. C. (western influence)
C	Hittite influence.

The chronology for Cyprus and the settlements in the western part of Asia Minor has been given partly on the basis of the Minoan chronology on Crete (EVANS) and this in its turn is based of course chiefly on the dating of the Egyptian dynasties. A certain hesitation is in some quarters considered to be called for in connection with this dating as soon as one gets farther back than the 12th dynasty; but as a rule the tendency seems to be to date the first dynasty in Egypt at least a couple of centuries farther back than the first dynasty in Ur.²

Much hesitation has been shown regarding the latter. Assyriologists have vacillated between 3150 and 2620 B. C. On the other hand, a number of investigators have recently agreed to date the third dynasty in Ur between 2298 and 2277 B. C., *thus with a difference of only about 20 years* (MEYER, CHRISTIAN and WEIDNER, DHORME, SIDNEY SMITH, WOOLEY). The beginning of the reign of Sargon of Agade is dated in several quarters to 2528 B. C.; but both 100 and 200 years earlier have been given. The non-linguistic archaeologists are here at the mercy of the Assyriologists.

After DE MECQUENEM (in »L'Anthropologie 1938) and L. LEGRAIN, H. KÜHN³ has given the following chronology for Babylonia:

El Obeid (Al'Ubaid)	4000—3700
Uruk V	3700—3500
Uruk IV	3500—3200
Jamdet-Nasr	3200—3000 (= Uruk III)
The Royal Cemetery in Ur	3000—2700
The Agade Dynasty	2700—2500.

¹ W. LAMB, Excavations at Kusura near Afyon Karahissar, I and II, *Archeologi a* 86 and 87.

² MARTINEZ SANTA OLALLA and H. KÜHN, Zum Problem der Chronologie des Neolithicums und der Bronzezeit (Ipek II, p. 134, 1936—37): »Seit 2500 v. Chr. besteht eine vollkommene Sicherheit und Zuverlässigkeit in der ägyptischen Datierung».

³ H. KÜHN, Chronologie (Ipek XII, p. 175).

The find of the proto-Elamite tablets in Tépé Sialk at Kashan is of course of the greatest importance also for the dating of the oldest layer in Shah Tépé. In his latest work on the prehistoric period in Iran,¹ Professor HERZFELD seems inclined to date the Sialk tablets to the Uruk period. »The first Tépé Sialk tablet was found in its original stratum together with six cylinder seals incontestably of Uruk character. GHIRSHMAN calls the stratum 'couche caractérisée par la céramique commune (= unpainted) identique à celle qui se situe entre Suse I et Suse II', and compares the pottery with that of Uruk. I wonder how far it might be compared with the unpainted Turkestan pottery, the existence of which is indicated by other observations. The period is at any rate older than Jamdet-Nasr, and corresponds exactly to that stratum of Uruk that contains the earliest Sumerian pictographic tablets.» »Together with six cylinder seals» does not signify an immediate connection, only that the objects were found in the same stratum. In Ghirshmans text there is spoken about seven cylinder seals and some fragments. GHIRSHMAN is of the opinion that these tablets appear later in Tépé Sialk than in Susa, and that, also if they are already met with in the younger layer *b* in 'la couche intermédiaire' in Susa (at least the older layer *a* = Uruk IV), they ought in Tépé Sialk to be regarded as belonging to the Jamdet-Nasr period.

In Uruk IV a considerable number of clay tablets with allied ideogram writing² have been found; but it is probable that this invention reached Elam and the rest of Iran at a later period than in Sumer. Somewhat more developed is the writing to be seen on clay tablets from Uruk II—III (=Jamdet-Nasr period).³

It is thus probably not too bold to assume that the proto-Elamite pictographic tablets of Tépé Sialk belong at the latest and especially to Jamdet-Nasr time, but perhaps even late Uruk time. The pottery in Tépé Sialk IV (Fouilles de Tépé Sialk I, Pl. LXXXVIII) corresponds closely in shape, it will be remembered, to that which was found in the Susa acropolis, level III = Uruk time. . . . (Mémoires de la mission archéol. de Perse XX, fig. 2, p. 103). If the proto-Elamite tablets in Tépé Sialk go down as far as Jamdet-Nasr time, then the layers in I C Tépé Hissar ought to be able to extend to the same period, at least with their upper part. It should also be borne in mind that we know nothing as to how long the proto-Elamite writing was in use after the cessation of Tépé Sialk IV.

The isolated sherd with ibex and rosette in Shah Tépé III thus probably dates the beginning of this layer at least to Jamdet-Nasr time (approx. 3200—3000 B. C.). The painted pottery in Shah Tépé belongs to the same period. There is also an undeniable resemblance in the patterns on this pottery and those on a number

¹ E. HERZFELD, *Iran in the Ancient East*; archaeological studies presented in the Lowell lectures at Boston, p. 14 (London-New York 1941).

² J. JORDAN, *Ausgrabungen in Uruk 1929/30*, p. 43 etc., *Abh. der preussischen Akad. d. Wissenschaften*, Jahrg. 1930, No. 4. Berlin 1931.

³ J. JORDAN, *Ausgrabungen in Uruk 1929/30*, fig. 15, *Abh. d. preuss. Akademie der Wissenschaften*, Jahrg. 1930 No. 4, Berlin 1931.

of sherds from Warka-Uruk II—III, that corresponds to the Jamdet-Nasr epoch.¹ On the other hand, the painted Shah Tépé pottery diverges in many points from the contemporaneous pottery of the Iranian plateau, but preserves older features from the same both as regards form, colour and certain ornamental patterns.

The low-bellied, round or slightly carinated jars occurring in the painted pottery from Shah-Tépé are still more numerous in the unpainted group. They are often black-polished, and not seldom ornamented with knobs and ridges. It has here been remarked that vessels ornamented in this way have been found already in the bottom layer (A III S⁸ a), and thus belong to the oldest epoch, even if they have survived until the boundary to the next period. The comparison that has been drawn between the probably contemporaneous hemispherical bowls ornamented with knobs found in Shah Tépé and in the Greek Orchomenos (page 235) is of interest, though it is difficult to prove any direct connection in 3000 B. C. between these regions that are so remote from each other.

Fruit bowls on high feet belong to the transitional layer between III and II b. They have here been compared with similar vases from eneolithic time in Alişar I, thus, according to Albr. Götze's chronology, about 2700 B. C. The time coincides well with the time that I assume for the corresponding layer in Shah Tépé. Related forms appear later, in proportion as one advances westward, e. g. on Cyprus (about 2300 B. C.) and in Thessaly (Minyan ware about 1900 B. C.). The dating has been made according to the current chronology for these places. Of still later date are considered the unpainted fruit-stands that have been found in south-eastern Spain. We have thus to reckon with a difference of more than 1000 years in the appearance of the oldest and the youngest specimens of this type of vase in the course of its spreading to the west, *if* the chronology is correct!

The early dating of Shah Tépé III is confirmed by, amongst other things, the fact that so-called mottled ware that has been found in F III has its counterpart in sub-neolithic and eneolithic layers in the »stone village» of Persepolis, in Anau II and in Phaistos on Crete.

Silver rings, spiral bracelets and copper tacks belong to early graves in Shah Tépé III. The forms are simple and not particularly characteristic, and they may naturally have survived for a long time. One finds tacks in Tépé Hissar I and copper arm-rings and small silver rings in Hissar II B. More noteworthy is the occurrence in Shah Tépé A III (No. 591) of a mould of clay for the making of copper hammers or mattocks. Such a mould, as also real mattocks of copper, are found only in younger layers in Tépé Hissar, namely in layers III B and C. In Mesopotamia, e. g. in Ur, such mattocks are known from early dynastic time, i. e. during the earlier half of the third millenium. It is probable that the mould from Shah Tépé belongs to just this period; but it may also in the course of ear-

¹ A. NÖLDEKE, Ausgrabungen in Uruk 1931—32; Pl. 20 C, bemalte Keramik, schwarz und rot (Abh. d. preuss. Akad. der Wissenschaften No. 6, Berlin, 1932).

lier excavations have happened to reach a greater depth than that at which it was originally situated.

The beak-spouted (side-spouted) round or biconical jugs appear already in the younger part of stratum III and survive in II b. I have already stated (page 241) that these jugs probably have their heyday about 2600 B. C.

Just above the boundary between II b and II a (+4.60 m) lay the grave B II s⁷, that contained an etched carnelian bead, previously referred to on pages 241 and 289. Certainly as regards form and ornamentation, exactly similar carnelian beads have been found hitherto only in Ur and in Mohenjo Daro; but white-etched carnelian beads are also known from Kish¹ and Chanhü Daro², and according to DE MECQUENEM also in Susa and Tépé Giyan. These are probably contemporaneous with the former. DE MECQUENEM dates the Susa beads to the time between the 25th and the 20th centuries. MACKAY³ and after him H. BECK consider that these beads cannot be later than 2750 B. C.; but later excavations in Ur have, as has been mentioned, shown that they can go down to Sargonide times, thus perhaps to about 2300 B. C. MACKAY is uncertain regarding the place of manufacture of these beads: »Perhaps Persia, where I believe the painting of carnelian is still carried on, was the source of supply both for Sumer and Sind». In the same essay⁴ MACKAY states that both from Mohenjo Daro and from Kish and Ur he knows another interesting bead-type. »Its shape is very peculiar, in that the sharp edges of the longer sides are notched. This particular bead is made of some kind of paste, which was at one time glazed; it is rhomboidal in section and measures 0.5 in. long by 0.1 in. thick». Two specimens of the same type of bead, but in plaster of gypsum (or alabaster), have been found in the grave Shah Tépé B II S⁷, together with the above-mentioned carnelian bead. A couple of closely related beads of alabaster (?) belong to the necklace, fig. 596 (A II S⁵ No. 68), that lay in a skeleton-grave with two spouted pots and an alabaster bottle. Also in this case the grave belonged to the beginning of period II a, that I am inclined to date to the 24th century B. C. The beginning of period II b is probably about 2800 (or somewhat earlier).

The occurrence of globular, coupled triple-jugs in stratum II a² speaks in favour of the dating of this layer to about 2300 B. C. and the centuries immediately after that has been given in these pages. Such clay vessels belong to the eastern Mediterranean region, as has already been mentioned, especially Troy II—V, Early Cypriot II A and III A as well as early Minoan III, thus the later half of the third millenium.

Shah Tépé II a² and II a₁ show agreement with Tépé Hissar III C, and this

¹ MACKAY, Report on the Excavation of the »A» cemetery at Kish, Mesopotamia, 1925, Pl. IV B 23.

² MAJUMDAR, Explorations in Sind, p. 38, Pl. XVII, 25 (Memoirs of the Archeol. Survey of India, No. 48, 1934).

³ DE MECQUENEM, L'Anthropologie, Tome 48, 1938, p. 70.

⁴ MACKAY, Further Links between Ancient Sind, Sumer and Elsewhere (Antiquity 1931).

layer can be connected with Early Cypriot II—III thanks to finds of weapons. In this way one would thus, as the end of Shah Tépé II a¹, arrive at about 2100 B. C. According to SCHAEFFER's dating of corresponding finds of spears in Ras Shamra, the period would extend into the 19th century B. C.

Of a certain importance for the chronology are some late graves in Shah Tépé, especially C II S² and G II S². In the former lay a number of rectangular and pyramidal faience beads, of which the rectangular ones remind one of certain beads of glass paste found in Tépé Giyan III and II, that CONTENAU wishes to date to about 1800 (2500—1800—1400) and DE MECQUENEM to about 1400 (2000—1400—1000). A similar bead from Tarkalan-Nuzi has been dated to the period 1800—1500. The grave probably belongs to the first half of the 2nd millenium, perhaps nearer to 1800 than 1500.

The grave G II S² contained, in addition to the skeleton, two grey clay vessels, an alabaster platter on a foot, two beads of greenish stone, a flower-shaped button of white-green faience, six fragments of at least three bone pins, two small spiral rings of thick copper wire and two small pendants of copper, formed of a ring with flattened, almost boat-shaped ends running past each other in a spiral. One of the bone pins is ornamented with acute-angled zig-zag bands which agree in every way with those on South Russian or North Caucasian bone pins with a hammer-shaped head, belonging to the copper or early bronze age¹. But bone pins with the same ornamentation are also found elsewhere and earlier, e. g. in Tépé Hissar III C and, as has already been mentioned, also in Tépé Gawra, during an epoch corresponding to Jamdet-Nasr time. These pins, however, lack the hammer-like head.

Spiral pendants of bronze are undoubtedly related with the pendants that have been found in graves belonging to the early Russian steppe culture². These pendants have, as TALLGREN has pointed out, a middle point in Transsylvania-Bohemia-Moravia in Aunjetitz times³; but on the other hand it seems to me that they are undoubtedly connected with gold ornaments from Hissar III C⁴, and with similar pendants in gold and copper from Ur and Kish in Mesopotamia. In time they certainly most closely approach the South Russian graves and Tépé Hissar III C. If the older Aunjetitz culture, as SCHRANIL assumes, developed between the 19th and 17th centuries, and if, as in various other respects it has proved, many wandering types of antique objects appear earlier in the Orient than in south-eastern and Middle Europe, then it would seem not improbable that the late grave G II S² should be dated to about 1800 B. C.

A similar dating of the concluding epoch in Tépé Hissar (III B—C) and Shah

¹ F. HANČAR, *Die Nadelformen des Kaukasusgebietes*, Fig. 3, 1—3 (ESA VII, 1932).

² TALLGREN, *La Pontide préscythique*, fig. 65, 1 from Jatskovitza, pp. 100 et seq.

³ Cf. SCHRANIL, *Die Vorgeschichte Böhmens und Mährens*, 1928, p. 102.

⁴ E. SCHMIDT, *Tépé Hissar Excavations 1931*, Pl. CXXII B (*Museum Journal* XXIII 4, Philadelphia 1933).

Tépé (II a) is also supported by finds in Hissar III B of pins with simple and double loophead akin to Cypriot copper pins with knothead¹. These, too, fall within the Bohemian-Moravian Aunjetitz period.

But even if one should wish to date this concluding epoch somewhat later, it seems that it cannot in any case be later than 1500 B. C. The traces of iron objects that have been found in Tureng Tépé cannot be adduced in favour of a late dating of the last phase of the prehistoric period, for they belong to Mussulman time². Nor is there any direct transition from the copper age in Tépé Hissar III C and Shah Tépé II a¹ to the developed bronze — and beginning iron-age culture that appears in Tépé Sialk's cemetery A. The beginning of this latter culture is dated by GHIRSHMAN to about 1200 B. C. Undoubtedly certain traditions survive at this time from the culture that is represented in Hissar III C and Shah Tépé II a, but not in Sialk IV. The disposal of the dead is the same. The black-grey pottery survives, but is always turned on a potter's wheel and shows mainly new forms. There is quite a big resemblance between a spouted bowl on a foot from Shah Tépé (G II S⁸, Fig. 264) and one from Tépé Sialk (Fouilles de Sialk II, Pl. III, 6). The latter, however is provided with a handle surmounted by a knob resembling the head of an animal. The beak-shaped spout survives and is further developed to special forms in Tépé Sialk, cemetery B. The bottles in cemetery A with their round bottom and body of even thickness do not conform very closely with the flat-bottomed upward-tapering bottles that constitute the commonest pottery in Tureng Tépé and are not absent from Tépé Hissar III B. (Cf. Ghirshman, *Fouilles de Tépé Sialk II*, p. 13). Burnished cross-hatched ornamentation occurs in a few cases in cemetery A (Tépé Sialk II, Pl. II, 1). Unpolished red pottery also occurs, though it is rare. There is no connection between the types of weapons in Tépé Hissar and in Tépé Sialk, cemetery A. On the other hand, there is certainly a genetic connection between the earring of bronze wire with flattened oval disc (Tépé Sialk II, Pl. XXXVIII, 452 a) and the earrings in Tépé Hissar and Shah Tépé (C II S²). Just as in Tépé Sialk cemetery A, such earrings (or lockrings) do exist in Western Europe in Hallstatt-times (*Pré-histoire* 1936: Boucles de Jogasses de Chouilly). But on the whole, the differences are so great that it is evident that a not inconsiderable interval of time lies between. In cemetery A we also find the first weapons and tools of iron (in grave IV), together with two vases provided with handles (a deep bowl and a jar), spear-heads with square section and arrow-heads of bronze.

With due reserves for the results at which astronomers and Assyrian linguists may arrive in the future, I should thus for Shah Tépé advance the following absolute chronology:

¹ E. SCHMIDT, *Excavations at Tépé Hissar*, Pl. LIII, H 2518, p. 205.

² GHIRSHMAN (*Fouilles de Sialk II*, pp. 13 and 104) is mistaken in believing that the iron objects in Tureng Tépé indicate contemporaneousness with cemetery A in Tépé Sialk.

- Period III: 3200—2900 (2800)
- » II b: 2900 (2800) — 2300
 - » II a²: 2300—2000
 - » II a¹: 2000—1800 (or somewhat later).

Tépé Hissar begins much earlier, in the fourth millenium, but ends at about the same time as Shah Tépé.

Tureng Tépé's mound C goes back to about the same time as Shah Tépé but ends earlier, about 2000 B. C. Both Shah Tépé and Tureng Tépé show at the top a layer from early Mussulman time.

CULTURE AND PEOPLE

The prehistoric civilization that was investigated in Shah Tépé is, certainly, a copper age civilization, but a primitive one. Implements and weapons of metal are very rare; such objects of bone, on the other hand, are more numerous, and simple flint-flakes were much used. The dwellings were built of stamped clay, neither sun-baked nor kiln-burnt bricks nor stones were employed. For the roofing, the Elbruz woods gave their tribute, and the tall reeds of the marsh-lands were also made use of. Layers of earth were then spread on top of all.

Of writing there was no trace — no proto-Elamite clay tablets and no seals with ornamentation that might indicate who the owner was. Nor were there any copper statuettes, as in Tépé Hissar, only some of clay.

It is of course impossible to affirm with certainty that seals and primitive writing were unknown in the communities of the Turkoman steppe, and particularly in Shah Tépé, until excavations on a larger scale have been undertaken. But the probability is that the cultural level sinks in proportion as one moves north-east from the Euphrates-Tigris region, Elam and the Central Iranian plateau. It should, however, be mentioned that seals and stamps of stone and clay have been found in Anau, Culture III.

The population had, nonetheless, fixed dwellings and formed communities of various size — villages or small townships. These were numerous on the Turkoman steppe and fairly close together, often only 2—4 km. from one another. It is conceivable that the domestic animals were during the hot season driven up the slopes of Elbruz, or to pastures that were better supplied with water. Besides the rearing of domestic animals, to which the numerous bones of animals and implements of sheep and cattle bone bear witness, agriculture was also carried on. This is indicated by, amongst other things, the numerous millstones and the flint blades of sickles.

From the scarcity of finds of weapons one would guess that the population of

the steppe lived a comparatively peaceful life, regulated by certain customary laws. These must have developed in connection with the pastures and cultivated regions and right of ownership of the herds. One may ask: were these small communities republics or small kingdoms, or possibly subject to a more central government, a great kingdom? One may speculate in various directions and seek analogies among contemporary forms of community in the valleys of the Nile, the Euphrates and the Tigris, indeed, why not also those of Indus and of the Hoang Ho? But the material for investigation is still too scanty to permit of any definite answer to these questions.

However primitive the civilization may have been in certain respects, the ceramic art was highly developed. This refers especially to the technique and the shaping of the pottery; the decoration, on the other hand, was simpler, both during the period of painted pottery and during the later, exclusively black-grey period.

The animal sculptures retain throughout the whole period of settlement their primitiveness, while the younger, well-made statuettes of women from Shah Tépé and Tureng Tépé are characterized by a certain artistic naturalism.

It is difficult to perceive, during the millenium and a half throughout which the Shah Tépé community existed, any cultural development of any importance. True, the variants of clay vessels increase, new metals, beads and alabaster vessels are imported; but the dwellings and the mode of life remain the same. Trade communications, however, were extended more and more. During the oldest period (III) there was some contact, though slight, with the plateau to the south of the Elbruz mountain-chain. This is evidenced by the ceramic fragment with ibex and rosette painted on a yellow-grey background. As an import from India I regard the carnelian bead with etched ornament, belonging to period II b. It is also conceivable that the clay bird that was found in layer B II may indicate indian influence, and the same applies to the clay rattles. The line of communication was probably over Afghanistan.

The alabaster vessels from period II a and the club-heads seem to derive from the Iranian plateau and Elam, indirectly a contact with the upper Euphrates-Tigris region. Communications with Mesopotamia are also indicated by the faience beads in grave C II s².

In itself, of course, Shah Tépé was an insignificant village, that probably did not carry on any very extensive trade; but if we consider the whole contemporary but as yet so little investigated steppe culture we must assume that it played the rôle of an important mediator between east and west during the 3rd millenium B. C. One must bear in mind that the Turkoman steppe region belonging to Iran alone has more than 300 settlements of various size, the majority of them belonging to the epoch mentioned. In the adjacent eastern Iranian mountain region and on the northern Russian side of the Atrek river there are also a great number. I suppose that the settlement here at the same period was denser than in the

country between the Oxus and Jaxartes, where E. HERZFELD places the home of the Indo-Europeans during the 3rd millenium B. C.¹

Unfortunately, no grain has been preserved in Shah Tépe, and it is doubtful whether any impressions of grain can be demonstrated in the pottery. But a charred fruit from the prehistoric strata in Shah Tépe has proved to be *CYDONIA VULGARIS* (oblonga), the quince.² This fruit is considered to have originated in Transcaucasia, Persia, Turkestan and south-east Arabia. It spread westwards and is mentioned in the middle of the 7th century B. C. by the Greek bard ALKMAN. The Greek name of Melon Kydonion was given it from a city in Crete. It was thought to confer, or at any rate to symbolize, fertility.

The animal bones found in Shah Tépe have been studied and classified by Professor J. W. AMSCHLER in Vienna.³ He has noted 18 different species, of which number 10 were wild and 8 domestic animals.

The wild animals comprised wild short-horned cattle (*Bos brachyceros* ARNEI AMSCHLER), large wild pigs (*Sus scrofa attila* THOMAS), Corsac dogs (*Canis corsac* LINN.), roebuck (*Capreolus capreolus* LINN.), oriental red deer (*Cervus maral* OGILBY), Mesopotamian fallow deer (*Cervus dama mesopotamicus* BROOKE), wild sheep of arkartype (*Ovis vignei* BLYTH), large porcupine (*Hystrix leucura* SYKES), storks (*Ciconia ciconia* LINN.) and European marsh-tortoises (*Emys orbicularis* LINN.).

The domesticated animals were the following: Pariah-like tame dogs (*Canis familiaris* sbsp), horses (*Equus caballus* LINN.), almost resembling the Arabian horse, asses (*Equus asinus* LINN.), domestic pigs (*Sus palustris* RÜTIM. of the *Scrofa* type), two-humped camels (*Camelus bactrianus* ERXEL), domestic sheep (*Ovis aries* LINN.), small domestic goats (*Capra hircus* sbsp), short-horned cattle (*Bos taurus brachyceros* RÜTIMEYER).

We have seen that sheep and cattle are often modelled in clay in Shah Tépe.

The wild pig, that is to-day still well represented in the southern-most steppe region, occurred only in the oldest layer in Shah Tépe (D III and E III). This was also the case with the Corsac dogs, deer, fallow deer, wild sheep and the wild short-horned cattle. The oriental red deer was found both in layer III and in layer II, tortoise and porcupine only in layer II.

Of the domestic horse there was only a bone-fragment in layer III, but several bones in layer II. The same applied to bones of the ass. The common short-horn cattle was well represented in all layers, as were also sheep, goats and domestic pigs. A bone of a camel was found in layer III. Dogs appeared only in layer II.

It is clear that these finds do not exclude the possibility that a particular animal

¹ E. HERZFELD, *Iran in the Ancient East*, p. 190.

² Identification by Prof. Samuelsson, Riksmuseum, Stockholm.

³ J. WOLFGANG AMSCHLER, *Tierreste der Ausgrabungen von dem grossen Königshügel Shah Tépe, in Nord Iran*, 1939. J. W. A., *Die Knochenfunde aus dem »Königshügel«, Shah Tépe, in Nord Iran* (Forschungen u. Fortschritte. Jahrg. 15, No. 9, 1939).

species may have occurred earlier or survived longer than the find-layer indicates. So much, however, seems evident, that the hunting of wild animals played a bigger rôle during the older period than later, and that sheep, goats and short-horned cattle were the most important domestic animals throughout the whole of Shah Tépé's prehistoric existence.

The domestic pig seems according to AMSCHLER to have been a descendant of the native wild pig. It is probable that also the domestic sheep was developed from a local form of the wild sheep. For the first time it has been possible to describe the progenitor of the Asiatic short-horned cattle as *Bos brachyceros* ARNEI, and from this the domestic form has derived, afterwards spreading in different directions.

AMSCHLER considers that the horse, that is relatively rare, was imported from more north-easterly steppe regions in Turkestan. The occurrence of the ass seems to indicate communications with the Near East. One horse-form, *Equus caballus* PUMPELLII, is known both from Anau and Tépé Sialk.¹

From the fauna AMSCHLER draws the conclusion that during prehistoric times Shah Tépé was characterized by a more moist climate with a rich growth of grass, herbs and trees. I disagree here with AMSCHLER, and scarcely think that the climate was in any high degree changed during the last millenia, in this tract so near to the Elbruz mountains and the Caspian Sea. Wild pigs still hide in the reeds along the road between Shah Tépé and Asterabad; porcupines still live there, as do also tortoises; indeed, even panthers and tigers appear here in the vicinity of the Caspian, and of course the jackal and the hare. The deer-species are all known in pictures from prehistoric Mesopotamia in the Royal Cemetery at Ur.²

The human skeleton-material from Shah Tépé has been examined by Professor CARL M. FÜRST³. Of the prehistoric crania, only a few were measurable, to be precise, 13 of 176. The length-breadth index varied here between 71 and 79, seven being dolichocranic and six mesocranic. Seven derived from stratum III and six from stratum II. »There were no brachycranic skulls. It may perhaps be of interest to mention that the cranium with the highest L-B-Index is a female cranium from layer III.» It was also possible to estimate the mean length of 19 skeletons. For the men it varied between 154.1 and 173.3 cm, with 4 skeletons under 160 cm and 2 (?) of at least 170 cm. The length of the 4 women varied between 140 and 161.1 cm, but 2 of these attained lengths of only 150.0 and 150.8 cm.

¹ It is interesting to compare the occurrence of animals in Troy I. The few bones found in Troy belong to the genera *Bos*, *Sus* (wild boars included), *Ovis*, *Cervus*, *Lepus*, *Canis* and *Testudo*. Horses, asses and camels are not represented. Only in Troy VI do we find the horse; the ass possibly in Troy IV (N. G. GEJVALL, The Fauna of the Different Settlements of Troy) Bull. de la soc. royale des Lettres de Lund 1938.

² E. DOUGLAS VAN BUREN, The Fauna of Ancient Mesopotamia as Represented in Art (1939).

³ CARL M. FÜRST, The Skeletal Material Collected during the Excavations of Dr T. J. Arne in Shah Tépé (Reports from the Scientific Expedition to the North-western Provinces of China, No. 9).

FÜRST compares crania from Shah Tépé with others from Tépé Hissar, Kish, Al 'Ubaid and Ur, where brachycephalic skulls are absent or extremely rare, but dolichocephalic skulls are more pronounced, with an index under 74. With characteristic caution FÜRST adds: »It should be evident from what has been stated above that on the basis of the cranial material we so far have at our disposal from the deeper graves in Asterabad-Gorgan it is impossible to make any definite statement as to their racial connection; but it should perhaps not be considered precluded that there is a certain racial connection between the earlier inhabitants of the above-mentioned inland localities, and that this also extended to the coastal inhabitants of the Mediterranean, at least to its north-eastern parts, judging by the finds in Cyprus».

Since FÜRST wrote these lines fresh skeleton-material has come to light from Iran, and been examined and classified by Professor VALLOIS in Toulouse.¹ The latter has arrived at a result that confirms FÜRST's assumption. The aboriginal inhabitants in Iran belonged mainly to the Mediterranean or Proto-mediterranean race, that since the beginning of the copper age has been distributed over the whole of the Near East from the coasts of the Mediterranean to the river Indus, from the Caspian Sea to the Persian Gulf. The so-called nordic race (*homo europaeus*) is but weakly represented in Iran of the copper age, and appears later than the Mediterranean and the still earlier hyperdolichocephalic (eurafican) racial type. Only 6 »nordic», markedly mesocephalic crania were found in Tépé Hissar.

On the basis of photographs of 3 crania from Shah Tépé, Professor O. RECHE has declared² that one sees at a glance that we have here to do with Europeans without any specifically Mongolian features. The crania do not show a single feature that in any way distinguishes them from the characteristic nordic form. These European skeletons prove that Turkestan has been populated by *North European agriculturists from the Lower Danube countries*.

The three crania from which Professor Reche draws his conclusions are the least dolichocephalic in the whole collection, with a length-breadth-index of 78.1, 79.5 and 77.17. The absolute measurements are, however, considerably lower than those of the »nordic» race. Whereas the length of skull for Swedes according to LUNDBORG's and LINDER's measurements is on an average over 193 mm, and the breadth over 150 mm, the length of the Shah Tépé crania mentioned is between 176 and 184 mm and the breadth between 140 and 143 mm. The latter measurements indicate a slenderer type than the »nordic» one; it agrees more closely with the Mediterranean type, whose skull according to RECHE is »verhältnissmässig klein, glatt und zierlich»³. Or does the pronouncedly mesocephalic character of

¹ H. V. VALLOIS, *Les ossements humains de Sialk* (R. GHIRSHMAN) *Fouilles de Sialk*, II, 1939.

T. J. ARNE, *Urinvánare och kulturbärare* (Fornvännen 1943); *Peuples autochtones et peuples civilisateurs* (Nouv. Revue de Hongrie, sept. 1943).

² O. RECHE, *Rasse und Heimat der Indogermanen* 1936, pp. 180 et seq.

³ O. RECHE, in the article »*Homo mediterraneus*» (Eberts *Reallexikon* V, 36).

just these 3 crania indicate a »nordic«, or as W. KROGMAN says Scythian-Aralo-Caspian streak?

Professor RECHE is undoubtedly right in asserting that the people in the pre-historic Shah Tépé were not of Mongolian, or Turkish or Alpine type. But when he tries to make them out to be Europeans, which in his terminology means »homo europaeus«, the Nordic race, and declares them to be Indo-Germans, he is on more uncertain ground. It has not been possible to show the presence of any Indo-Germanic race, though there is evidence of Indo-European languages. Whether the inhabitants of Shah Tépé spoke an Indo-European language, or perhaps a Semitic or »Japhetic« language cannot yet be determined. As we know, some writers have given Turkestan as the original home of the Indo-European or »Aryan« race. The most recent of these is Professor E. HERZFELD, who says:¹ »From time immemorial, at least from the end of the third millenium down to the middle of the second, the Aryans inhabited, as an individual ethnical group, the vast plains of the Oxus and Jaxartes, the land Erānvej of the two rivers Vahvi and Ranhā. The old Iranian legend remembers well that original home.« According to Professor HERZFELD's dating, it is not necessary to describe the inhabitants in Shah Tépé or the other steppe-communities in the neighbourhood as Aryans; rather does this dating coincide with the period when the settlement came to an end and the inhabitants were driven away.

It has been mentioned that the first inhabitants in Shah Tépé, and presumably also in the other steppe-communities, settled here at the earliest about the end of the 4th millenium B. C., or about 3000. It is of course possible that new investigations of other tépés may lead to the discovery of still older finds, contemporaneous, perhaps, with Tépé Hissar I A and B. Where did these first settlers come from? Scarcely from the south, from the Iranian plateau, for there the older black-grey ceramic is not found; and in the second place the painted ceramic characteristic of Tépé Hissar is represented to the north of Elbruz only by one or two imported pieces. Did they then come from the north or the north-east? We know, certainly, an older culture in Anau, partly (culture III) contemporaneous with Shah Tépé, in part probably older; but the Shah Tépé ceramic does not seem to have been borrowed from there. Nor do the finds from Ak Tépé, situated south of Ašchabad, show any immediate relationship with the oldest ceramic from Shah Tépé. This question cannot be cleared up before the Russians have themselves carried out more comprehensive investigations in their tépés and published these investigations.²

The early occurrence of domestic sheep, goats and cattle in Shah Tépé might

¹ E. HERZFELD, *Iran in the ancient East*, p. 190.

² At the Iranian exhibition in Leningrad 1935, interesting finds from Ak Tépé were displayed, such as biconical whorls of clay and stone, clay wheels, door-hinge-stones, mill-stones, pointed black-on-white pottery with ibex and pine-like trees, black, brown or gray, undecorated pottery (sometimes biconical), black pottery with snakes in relief, black-grey sherd with knobs round an open short spout.

indicate that more or less nomadizing tribes from the extensive regions to the north-east settled on the Iranian Turkoman steppe, in the vicinity of the sedentary population of the plateau, and went over in time to their mode of life.

The pottery most closely related to the polished black-grey ceramic has hitherto been found in the west, in the tracts about Lake Urmiya,¹ at Ališar and in the western parts of Asia Minor, indeed, even on the Greek mainland, e. g. in Orchomenos. That a connection exists between the Shah Tépé ceramic and this North Persian-South Caucasian-Anatolian ceramic is, in my opinion, beyond doubt. But it is as yet, it seems to me, too early to give any definite opinion as to which is the older, which giving and which taking. Perhaps both have their origin in an older source. One's thoughts turn in this connection to the ceramic of the Uruk period, whose origin is also undetermined. Many more investigations on north-western Iranian and eastern Anatolian soil will yet have to be made.

W. Krogman's examination of 53 crania from Ališar² has shown that the copper age inhabitants of that place belonged to the same racial type as the oldest Iranians, namely, the proto-Mediterranean; and it was only later that an Alpine race penetrated, that reached its heyday under the Hittite dominion. Also this circumstance indicates a close kinship between the Caspian and the Anatolian regions during the first half of the 3rd millenium and somewhat later.

The Turkish anthropologist M. S. ŞENYÜREK has carried out investigations of other osteological material from Anatolia, that have yielded the same result.³ M. VALLOIS even assumes that the oldest population in Iran had come there from the Mediterranean region during mesolithic time, and he considers it to be reminiscent of the primitive dolichocephalic Mediterranean type, that was the representative of the Natufian mesolithic culture in Palestine.⁴ But such an anthropologic connection does not explain from whence the immigrants to the Iranian Turkoman steppe, with their highly developed culture, first came. To solve this problem we need a chain of investigations in the region between Syr Darja and Amu Darja, also in Turkmenistan, on the Iranian Turkoman steppe, in the coastal region to the south of the Caspian Sea and beyond as far as Urmiya and the Van lakes.

Sometime after the beginning of the first half of the second millenium (probably about 1800 B. C.) the copper age culture in Shah Tépé came to an end, just on the fringe of the bronze age. It is evident that it ceased at about the same time also in several other communities on the Turkoman steppe, in Tureng Tépé even somewhat earlier. Also in Tépé Hissar, to the south of Elbruz, the older prehistoric culture disappeared at the same time. The cause of this change is not known with certainty. One speculation is that there was a change in climate, that entailed

¹ At Gök-Tépé and Digalla Tépé (Z. f. Ethnologie 30, p. 609.)

² In H. V. DER OSTEN, The Ališar Hüyük (Oriental Inst. Publ. XXX, III, 1938.

³ M. S. ŞENYÜREK in Belleten 1941.

⁴ H. V. VALLOIS in Tépé Sialk II, p. 181.

altered conditions of life; but there is no indication of either an »era of drought» or an »era of wetness», of a flood or any other natural catastrophe, e. g. an earthquake. These tracts have, however, not infrequently been visited by such during historic time. Nor is there evidence of an epidemic, with consequent irregular modes of burial. More plausible is the assumption of an epizootic epidemic among the cattle; but nothing definite can be asserted about it. One is most inclined to assume an invasion by nomads, who forced the older population to move elsewhere. There is a lapse, actually, of more than 2000 years before the presence of a new population can be established, and this is in racial respects quite different; it has only brachycephalic or hyperbrachycephalic types to show. Now, however, two questions arise: where did the earlier settlers go to, and who were the invaders? The latter, it should not be forgotten, left no trace behind them. One might well suppose them to have been nomads coming from the north, who advanced over the cultivated and well settled steppe region, taking the inhabitants with them. They may have been Turks, harrying and taking captive the population: this would be an anticipation of the historically well-known struggles between Turan and Iran. It is also conceivable that a nomadizing »Indo-European» or »proto-Mediterranean» people penetrated the region and destroyed the civilization of kinsfolk that had settled there, — one thinks of an analogy with the series Cimmerians-Scythians-Sarmatians.

South of the Elbruz chain, however, survived traditions from the period of the black-grey ceramic. Both at Damghan and at Tépé Sialk lathe-turned black and black-grey pottery has been found, that must undoubtedly be regarded as an 'heir' of the copper age and that itself survives far into the bronze age, indeed, even as far as the threshold of the iron age. We have not as yet, however, a consecutive line of development in eastern Iran to explain the connection. It would, of course, be possible to advance still another hypothesis, namely, that the population on the Turkoman steppe for some reason emigrated voluntarily, raking with it its cultural form to other tracts, to the east or the west. It is not, however, at present possible to prove such an emigration; and I think it is yet too early to take up any definite position in this question on the basis of the material so far available. Continued investigation in the tépés of the steppe may perhaps show that only a partial emigration took place, on account of over-population. That which according to legend took place on the island of Gotland during the epoch of migrations may of course have occurred also in ancient Hyrcania.

THE MUSSULMAN FINDS

The uppermost culture-layer in Shālī Tépé (I) belongs, as has been already mentioned, to early Mussulman time. It contained 80/81 skeletons, the majority (65) concentrated to shafts C, E and H. Here, then, was a Mussulman burial-place; and it was obviously concentrated round an Imam Zade, a burial-tower, lying in shaft G. The burial-tower was in ruins; but bricks probably belonging to it were strewn about in the majority of the shafts. True, the bricks in the tower were of another size ($0.34 \times 0.34 \times 0.07$ and $0.225 \times 0.225 \times 0.048$ m) than certain of the others (in A: $0.24 \times 0.24 \times 0.037$ m and $0.215 \times 0.215 \times ?$ m); but it is very possible, in fact probable, that the tower contained bricks of not only 3 but 4 sizes. The scattered bricks may thus be taken to indicate not the occurrence of other buildings, but only of a burial-tower. The early Mussulman population, probably nomadic, had only a burial-place at Shah Tépé, but no permanent settlement. Such ancient tépés are also frequently used by the present-day Turkomans as burial-places; and one may sometimes see an iron pot or a wooden bowl standing on the grave.

The Musselman graves have been described above. Only a few finds could be directly related to the graves. The majority were loose finds. The more important will be mentioned here.

METAL OBJECTS

A.) *Coins*. In shaft E, on the boundary between I and II, was found a little cylinder of *silver coins*, verdigrised together, that had perhaps lain in a cylindrical linen bag. Diam. 2.7 cm; height 1.4 cm. There were 12 coins in all, 10 being Umayyad and 2 Abbasid. (E II no. 597, Pl. LXXXI, Fig. 668 a, b).

	<i>Dynasty</i>	<i>Mint-town</i>	<i>Year</i>	
1.	Umayyad	Jayy (Old Isfahan)	A. H. 82	A. D. 701
2.	»	Darabjird	» 91	» 709
3.	»	Wāsīt	» 94	» 712
4.	»	Wāsīt	» 95	» 713
5.	»	Wāsīt	» 95	» 713
6.	»	Wāsīt	» 95	» 713

	<i>Dynasty</i>	<i>Mint-town</i>	<i>Year</i>	
7.	Umayyad	Wāsiṭ	A. H. 96	A. D. 714
8.	»	Dimešk	» 96	» 714
9.	»	Ardašir Ḥurrah (Shīrāz)	» 96	» 714
10.	»	Wāsiṭ	» 104	» 722
11.	Abbasid	Madināt al Salām	» 157	» 773—774 (al Mansūr)
12.	»	al-Muhammadīyah	» 165	» 781—782 (» Mahdī)

These coins probably found their way into the earth about the end of the 8th century, but it is curious to observe an interim of 50 years between the Umayyad and the Abbasid coins.

Two further Abbasid *copper coins*, the one (D I 7 no. 263) probably an early Abbasid, the other probably minted in Madināt al Salām, about 150—158 A. H., 774—775 last year A. D. (H I no. 1223). Two indeterminate Arabian *silver coins*, verdigrised together, were badly corroded (G. I. no. 743). And finally, a Persian Mongol coin, minted for Abāgā A. H. 665—670, A. D. 1265—1272 (H I, no. 1086), was found. Cf. B. M. C. 6 m. 39—42 (Pl. LXXI, Fig. 669).

B.) *Bronze objects.*

A *bronze buckle* with an oval frame, firmly fixed to a shield-like strap-fitting (F I, Pl. LXXXI, Fig. 670). This has a semi-round end part and two concave narrow sides; it is decorated with 3 small projections from the edge and with 5 dotted circles, of which 3 are connected by engraved lines with the round hole in which the prong, now missing, was fixed. The ornamentation indicates palmette division as the model. On the back side of the strap-fitting there were two lugs. Length 5.1 cm. Breadth of frame 3.7 cm. Colour black-brown. Byzantine import (cf. ORSI, Byzantina Siciliae VII, I fermagli di cintura [Byz. Zeitschr. XXI] Leipzig).

Three bronze finger-rings

1. *Bronze finger-ring* with round shield, provided with unreversed Arabian inscription that seems to read as follows: Ya, Muhammed, ya, Ali. Three small »projections» are to be seen on the ring. Diam. 2.3 cm. Diam. of shield 1.6 cm (C I no. 151; Pl. LXXXI, Fig. 671 a).

2. *Bronze finger-ring* with oval shield, bearing an inscription of 4—5 Arabian characters. Diam. 1.55 cm. (A I no. 2; Pl. LXXXI, Fig. 671 b) +4.70 m.

3. *Bronze finger-ring* of two twisted wires with damaged stone, cabochon setting. (Diam. 2.1 cm (A II 7, no. 31; Pl. LXXXI, Fig. 671 c).

Further, there are a little *bronze ring* with square section (F I), fragments of *bronze-sheet*, one having remains of iron nails (A I 5, A I 25, F I, Pl. LXXXI, Fig.

672) an oblong *bronze mounting* to the handle of a knife (F I, no. 662; Pl. LXXXI, Fig. 673) and a little square *bronze plate* with broken off comb-teeth (F I).

Further, a *couple of bronze earrings* from G I s⁴ (see below).

C.) *Iron objects.*

Iron dish with slightly rounded bottom and resembling a segment of a sphere. The ware is about 0.6—0.7 cm in thickness. Diameter 25.3 × 27.4 cm. Height 7.2 cm. This dish is not altogether regular, and especially on the inside it is full of rust 'blisters'. (H I 3, no. 1201; Pl. LXXXI, Fig. 674).

Bent piece of *sheet-iron* on the broader side of which there is a loop, whose ends have been driven through and bent to either side. Length 7.8 cm; present breadth 6.1 cm. Possibly the upper rim of an iron kettle (A I 27, no. 13).

Piece of an *iron knife*(?). Broad tang with a hole in the end, in which there is a fragmentary ring. Length 4.65 cm; breadth 2.6 cm (C I 12, no. 109).

Fragmentary *iron pin*. Length 7.8 cm (+6.90 m, C I s⁴a no. 106)

Little piece of a round *iron disc* with a protrusion from the edge, possibly a fragment of a hook. Present diam. 4.15 cm.

Curved, flat *piece of iron*, resembling an ox-shoe, but without holes for nails. Length 9.15 cm. Breadth 7 cm. Thickness approx. 1—1.2 cm. (E I).

Four heavy *iron nails*, one having a broad and thick head. Present length 6.9 cm. Diameter of head 4.2 × 4.8 cm. (G I no. 779); *one* iron nail with flat head. Length 9 cm. Diam. of head 3.15 cm (H I no. 1088); of the remaining two, one was found in A I (no. 1073).

D.) *Grave-finds with bronze and iron objects etc.*

In G I s⁴ (no. 965) were found remains of a two-shanked *iron scissors*, a *hook*(?) of iron, a long *iron knife* and several *fragments* of iron. The *scissors* are 17 cm in length, broken in several parts and the blades rusted together. Remnants of cloth visible in the rust. The *iron hook*(?) is 10.8 cm in length, provided with a flat, triangular carinated part, from which a narrow projection juts out, round in cross-section and bent at the end in the form of a loop. Remnants of fine *linen*(?) are rusted fast to the object. The *knife*, whose tip and tang are broken off, is 20.2 cm in length (Pl. LXXXII, Fig. 675 a—d). In the same grave (G I s⁴) were found two fragmentary bronze earrings (no. 964) and 7 glass beads (no. 966). The earrings (Fig. 676) consist of a curved bronze wire, one end of which continues in a straight line, to end in a bead-like knob. Length 3.45 cm. Of the beads (Pl. LXXXII, Fig. 677), 5 are black, one yellow-white, and one sevenfold bead yellowish.

A number of other iron fragments are listed under no. 10, A I 20 (a hoe or celt, with two embracing wings for the handle. Length 16 cm; (Pl. LXXXII, Fig. 678), no. 104 C I (iron knife; length 8.5 cm), no. 202 C II (fragment), no. 351 D I (iron rivet), no. 607 E I (half a sickle; length 15.3 cm; etc.), no. 967 fragments of a knife), no. 1087 H I (iron nail), no. 1133 H I (pricker), no. 1224 H I (rivets).

BONE OBJECTS

Four *lathe-turned spindle-whorls of bone* were found, all plane-convex. One spindle-whorl (E I no. 518) was without ornamentation. Diam. 2.55 cm; height 0.8 cm. The rest were ornamented. No. 70 A II 30 was decorated on the convex side with 3 concentric circles, one of which was drawn immediately round the hole in the middle. In the intermediate zone there are six circles around a centre point, and outside of these a further six such point-circles alternating with double transverse strokes. Such strokes are also to be seen on the edge, three and three. The circles are incrustated with red pigment. Diam. 2.4 cm; height 0.55 cm.

No. 508 E I is ornamented with three concentric circles. Diam. 2.7 cm.

The upper middle part of no. 604 is somewhat sunken, and is ornamented around the centre-hole with 10 small point-circles in relief. Diam. 2.75 cm; height 0.55 cm (Pl. LXXXII, fig. 679 a—d).

GLASS

In Shah Tépé were found the remains of over 200 glass vessels. This number has been arrived at by counting the different bottoms, rim-fragments and necks. Only *three* more or less *intact small glass vessels* were collected. Two of these (E I no. 605 and C I 15, no. 122) remind one of small undecorated vases from Iran, published by C. J. LAMM¹ and dated to the 8th—10th centuries. One of these (E I no. 605) is of thin, light green glass, now partly white, partly iridescent with white neck and concave bottom. Height 5.25 cm; diam. 5.25 cm. diam. of mouth 3.7 cm (Pl. LXXXII, Fig. 680).

The other (C I 15 no. 122) is of thin green glass but with narrower neck than the preceding vessel. The bottom is slightly concave. Height 3.9 cm; diam. 3.8 cm (+ 6.20 m).

The third vessel (E I no. 606) has concave sides and a bottom that is somewhat wider than the mouth. The colour was originally green; but is now through irisation almost black. Height 2.9 cm; diam. at the base 2.9 cm; diam. at mouth 2.35 cm. Slightly concave bottom (Pl. LXXXII, Fig. 681).

At least 18 *necks* of glass bottles were found. Among these was noted a tall cylindrical neck of dark green glass with outward spreading rim, the latter pinched together at one side to form a lip or open spout. Height about 11 cm; diam. of mouth 7.1 cm (Pl. LXXXII, Fig. 682 b).² Other fragments in CI.

A neck with a small piece of the body (Pl. LXXXII, Fig. 683) belonged to a long vessel of light green glass with longitudinal depressions (C I 16). Length 3.9 cm; width of mouth 1.5 cm. Five whole or fragmentary bottle-necks with disc-shaped

¹ C. J. LAMM, Glass from Iran. Pl. 16 K and 12, C, E.

² Cf. C. J. LAMM, Glass from Iran, Pl. 13 D (about 900 A. D.).

rim horizontally spreading out from the opening and comparatively massive. Diam. from 3.00—3.8 cm. (A I 13 no. 32, A I 38 no. 57, C I 33 no. 244, A I) (Pl. LXXXII, Fig. 684).¹

A fragmentary mouth of green glass and with open spout. Diam. 6.8 cm (C I). Other necks show a diameter of 1.7 and 5.5 cm.

At least 25 *handles* of glass vessels were collected. One *green handle*, together with thickened mouth part, measured 8.9 cm in length, while the diameter of the mouth amounted to 5.25 cm (A I) — (Pl. LXXXIII, Fig. 685).

Seven long, elliptically curved *handles* in various shades from light to dark green. The upper part has been bent and folded in the melting stage, when it was affixed to the mouth and belly of the vessel (A I; Pl. LXXXIII, Fig. 686 a, b). Cf. C. J. Lamm, op. cit., Pl. 13 A, C, E (9th century A. D.). Fragmentary *handle* to violet-shimmering glass vessel with spherical knob on top. (H I; length 4.7 cm; Pl. LXXXIII, Fig. 687). Cf. C. J. Lamm, op. cit., Pl. 13 C. *Cup-handle* fixed to a cup of yellowish glass, now iridescent in milk-white to blue. Height 5.2 cm (H I no. 1049; Pl. LXXXIII, Fig. 688).

Two complete, slightly curved *handles* of green glass, one with a portion of the rim attached. Respective lengths 10 and 9.7 cm (Pl. LXXXIII, Fig. 689; H I).

A number of other slightly curved glass *handles* varied in length between 6.6 and 9.2 cm.

There were 45 pieces of *rim*s of glass vessels. Of these, six were *rifled* or *grooved*. One piece (A I no. 4) had belonged to a bowl with thickened rim, probably formed by bending over. Chord-length 11.4 cm. (Pl. LXXXIII, Fig. 690). A little iridescent piece of green glass showed parallel raised ribs, like fine threads lain on afterwards, but possibly produced during the casting. Length 3 cm (F II no. 1062; Pl. LXXXIII, Fig. 691). Other pieces have oblique flutings and in part flat, in part thickened, rim. Four or five bits of smooth, undecorated dark blue glass showed a *thickened rim*. Also smooth and undecorated were 28 other thickened *bits of rim*, belonging to 8—10 different vessels, judging from the thickness of the rims. They were for the most part found in C I and A I.

Eight *rim*s were smooth, and not specially thickened. They were made of green glass but were now shot with bluish, dark grey and light grey colouring (A I).

Among about 90 for the most part green or brown, seldom blue *portions of wall from glass vessels* from A I and C I, 8 were decorated. The ornamentation consisted of ovals or flutings (Pl. LXXXIII, Fig. 692 a—d). The ovals seem to have been produced during the mould-blowing.

There were a large number of *bottoms* of glass vessels in Shah Tépe (considerably over 100). As a rule the vessels have been partly free-blown, partly mould-blown. The bottom part is generally outwardly concave, with a corresponding convex

¹ Op. cit., Pl. 9 K, L (6th—8th centuries A. D.).

elevation inside. The outer surface can, however, also be flat; but the inner surface is seldom so. In nearly every case a break is visible on the under side, where the blowing tube was attached. In the great majority of cases the bottoms are undecorated; but at least 16 bottoms show ornamentation, either flutings or flutings combined with flat, round dents. Irisation is rather common in the for the most part green glass. Of the decorated bottoms, 10 are provided with radiating curved flutings (Pl. LXXXIII, Fig. 693). Four bottoms show a combination of radiating curved flutings and round dents outside the same (Pl. LXXXIII, Fig. 694). A couple of fragments of bottoms are ornamented only with round or oval depressions, arranged in circles. One bottom-fragment belongs to an iridescent vessel with wide, thin bottom, 11.6 cm in diam. (Pl. LXXXIII, Fig. 695).

Of the undecorated bottoms, seven belonged to small, thin, probably free blown bottles with a diameter varying between 3.2 and 4.6 cm. (Most from C I and H I).

Other bottoms have belonged to larger, in most cases mould-blown vessels. Of these, 21 were found in A I, 12 in C I, 1 in H I and 1 in G II (?), while at least 65 bottoms are without data as to shaft. The majority are of green glass, sometimes extremely beautifully iridescent. At least 6 bottoms or fragments of bottoms are of brown glass, here, too, for the most part iridescent. One such brown bottom has a diameter of about 8.5 cm. On some bottoms the mark left in the middle of the concave part by the breaking-off of the blowing tube is surrounded with one or two raised rings (Pl. LXXXIII, Fig. 696). One bottom is round, flat, knob-shaped, and forms the foot of a cup of thinner glass (Pl. LXXXIV, Fig. 697). Still another bottom is flat and massive, thickened at the edge by the bending upwards and backwards thereof, after which the wall continues direct. Original diam. about 7 cm. Only a fourth part of the green bottom is preserved (Pl. LXXXIV, Fig. 698).

POTTERY

This is of two kinds, glazed and unglazed.

1. *Glazed pottery.*

The ware varies in colour from light grey through faint pink to light brown. The vessels are wheel-turned, generally wide bowls on a round flat foot at most 1 cm in height, but also include tall pots with handle and spout. The latter belong to category 1.

1) Pottery that on the outside, sometimes also on the bottom, is covered with a *blue-green or green glaze*, and on the inside covered with a similar or sometimes yellowish or light blue glaze. This glaze seems to have been inherited from Parthian-Sassanid time. There are sherds of a vessel with a 5.8 cm tall and about

15 cm wide neck, as well as one or perhaps two handles attached to the lower part, about 4 cm below the neck. Another piece of a narrow neck has fluting both on the inside and the outside. On one of the two loose handles, near the top, there is seen a little knob, that is often found on the unglazed handles from Mussulman time. Of the three spouts, one measures 12 cm in length. The rims show a certain knobiness in the glaze. The ornamentation consists of 2 to 3 encircling flutings. About 30 pieces have been preserved. The sherds derive chiefly from shaft A I; but one handle was found in H I (Pl. LXXXIV, Fig. 699 a-g).

2) Pottery covered with *greenish yellow-white, brown and green glaze*, sometimes also decorated with *brown-black spots or lines*. Chinese influence.

Two bowls, of which one derives from A I, have the inside glaze divided into three broad, different coloured, radiating bands. The outside is monochromatically glazed in a more green-yellow tone. (Pl. LXXXIV, Fig. 700 a, b). About 25 sherds have the green and brown colours distributed more as spots on the more or less yellowish surface, but are in addition ornamented with black wavy lines, sometimes perhaps intended to represent a sort of leaf-ornamentation. On a number of sherds black dots are arranged in circles, or on and between curved lines. Sometimes black transverse lines. (Pl. LXXXV, Fig. 701 a—e). These sherds were in part found in H I and C I. Similar ones have been found also in Gumüs Tépé.

3) Five sherds of pottery with grey to faintly pink ware, covered on the inside with yellowish glaze, mostly ornamented with patterns in green and blue glaze (green narrow curved bands and hatchings with blue dots) and with »incised» circles and loops on the glaze Pl. LXXXV, Fig. 702 a—d).

4) Three sherds (including 2 bottoms) of pink ware with inside glaze in light yellow and brown. Patterns in brown of concentric circles — foliage(?) and Arabian characters(?)¹) (Pl. LXXXV, Fig. 703 a—c). In still another sherd the pattern is black-brown.

5) Two sherds of grey ware have an inside grey glaze with in one case a brown flower (Pl. LXXXV, Fig. 704) and in the other case circle and line ornamentation (Pl. LXXXV, Fig. 705). From G I.

6) Three bits of brick-red ware with thin, white-grey glaze. One of the pieces gives more the impression of being covered only with a white slip, on which some insignificant patterns in black have been painted.

7) Half of a little, inwardly glazed (Pl. LXXXV, Fig. 706) low bowl of yellow-grey ware. The glaze is white with dark green spots. Diam.: 8,65 cm.

2. Unglazed Pottery.

The greater part of the Mussulman pottery is unglazed, with red or brown brick colour. The vessels are wheel-turned, not infrequently covered with a thin wash and polished. This polishing has been carried out with an implement, probably

¹ Probably part of an epigraphical formula like 'baraka' (Syria V, p. 64).

of wood, so that a streaking effect has been produced that occurs also on Cypriote pottery. This is referred to as 'stroke polished ceramic'. Only a few unglazed clay vessels were relatively well preserved.

1) A *bowl* with two horizontal lugs. Squat globular form with slightly rounded base and wide mouth, whose lip is thick and rounded. Brown clay, sooty on the lower half and with corroded bottom (Pl. LXXXVI, Fig. 707 a). Under the mouth the vessel is ornamented with an encircling series of impressions, arranged obliquely in fives. Diam. 24.8 cm; height about 12.8 cm (no. 121, C I 4; +6.45 m). Of this type of vessel there are two more mouth-fragments. Both of these, below the thickened rim, are decorated with an encircling series of obliquely arranged wedged impressions (Pl. LXXXVI, Fig. 707 b). One of the fragments has been provided with a short spout (Pl. LXXXVI, Fig. 708). A third fragment belongs to a large, coarse vessel, ornamented in the same way as the two preceding fragments but provided with a broad and flat, outward-spreading rim.

2) Round, convex *lid* of clay, crowned on top with a broad, double arched handle. The upper surface of the lid is stroke-polished in concentric circles. The colour is shining light brown. 4.25 cm above the outer rim it is ornamented with an encircling rope-pattern in relief; inside this again are radiating patterns of ears of corn or spruce-twigs and internally hatched triangles (Pl. LXXXVI, Fig. 709). Diam. 26.7 cm, height, without handle, about 7.0 cm (no. 113, C I s⁴).

There are fragments of at least three other similar lids. A sherd with double arch handle has on the latter a couple of knobs and is decorated with 2 rope-patterns. (A sherd from E I).

3) A convex *lid* of red clay, crowned on top with a concave knob and provided with a somewhat upward-tending rim. Diam. 23.1 cm; height about 6.5 cm (no. 82 A I 12; +6.60 m). (Pl. LXXXVI, Fig. 710).

4) Little concave *lid* of yellow-grey clay with an erect knob in the middle of the upper concave surface. Wheel-turned like the preceding. Diam. 8.9 cm (no. 110, C I 13; +6.90 m). (Pl. LXXXVI, Fig. 711).

5) Little concave *lid* with knob, but of red clay. The lower part is thickened and grooved near the edge. Diam. 8.7 cm. (A I) (Pl. LXXXVI, Fig. 712).

6) Little pointed oval or heart-shaped, wheel-turned *lamp* of light grey-red clay with short, abruptly ending, almost square handle. Damaged near the mouth but restored. Present length 11.2 cm; width 8 cm; height 3.5 cm (no. 1230 H I s²; +7.20 m; Pl. LXXXVI, Fig. 713). Found with skeleton. A similar, but glazed lamp from Shahr-i-Daqianūs, Makran, East Iran, is shown in a picture by A. STEIN.¹ Others were found in Bolgary and Biliarsk at the Volga.

7-10) Five high *necks* with handles, belonging to tall jars. The five necks (no. 7 A I 17, no. 8 A I 10, no. 9 A 9, no. 17 A I 8 and no. 114 C I s⁸ a) are stroke polished longitudinally, but the polish is rather eaten away, especially that of no. 9. The

¹ A. STEIN, *Archaeological Reconnaissances*, 1937, Pl. XXI, 600.

mouth part is spreading and appears on the outside as an almost vertical collar with a hollow on the under side. Under this »mouth-collar» run 5 to 6 flutings round the neck above the upper point of attachment of the arched handle. The lower point of attachment is on the body of the vessel just below the neck. Immediately below this is a wreath of oblique lines. On 2 handles there is a little knob near the top. No. 7: height 18.5 cm; diameter of mouth 11.30 cm. No. 8: height 18 cm; diameter of mouth 13.05 cm. No. 9: height 17.8 cm; diameter of mouth 12.5 cm. No. 17: height 14.7 cm; diameter of mouth 9 cm. No. 114: height 16 cm; diam. of mouth 9 cm. (Pl. LXXXVII, Fig. 714 a, b). The vessels probably resembled, as regards shape, Plate IIa in F. SARRE, *Die Keramik von Samarra*.

In addition there are several halves and a number of fragments of necks, together with a dozen vessels like those mentioned above. The shortest diameter is 6.6 cm.

In one half of a neck the rim of the mouth is turned outwards and bent over. Under it and a little lower there is a deep hollow, delimited by a sharply protruding ridge (Pl. LXXXVII, Fig. 715). This mouth-formation is seen also on other larger vessels of which fragments were found.

There are also other fragments of necks. In one of these the neck is wide, upright (only slightly out-spreading), with smooth edge and ornamented with burnished wavy lines. Burnished lines are also to be seen on another fragment with the belly-line beginning at a sharp angle. (Pl. LXXXVII, Fig. 716). The vessel's shape reminds one of fig. 1 in F. SARRE, *Die Keramik von Samarra*.

On one fragment of neck there are incised wavy lines.

11) 14 arched *handles* of red burnt clay, several from A I. On four better preserved specimens there is a little knob on top. Mostly circular cross-section. These handles probably belonged, or most of them, to jars with necks of the kind mentioned above. There are also cups with handle (Fig. 717).

One little flat handle is bent in the form of a circle.

12) Four short, straight, almost conical *handles* or *feet*, with flattened, upward-bent ends and polished surface (Pl. LXXXVII, Fig. 718). Length 5.5 — 7.3 cm.

13) A dozen more or less fragmentary *bottoms of clay vessels* whith red brick colour.

One such flat bottom is surrounded at the edge with a rope-pattern. From this projects a small, broad, arched, now broken handle, that had been attached lower down on the sharply outward-sloping wall of the vessel. Inside the rope-pattern there is incised ornamentation as in (Pl. LXXXVII, Fig. 719 a, b). The decoration reminds one of that seen on lids. These vessels have been wheel-turned, as have also 4 others that will be mentioned.

One bottom shows a ring-shaped elevation round the edge, and inside this a flat depression with lines from the turning on the wheel (Pl. LXXXVIII, Fig. 720). Another flat bottom is surrounded with a deepened groove and outside this a low »stand-ring» (Pl. LXXXVIII, Fig. 721).

Two bottoms from A I are provided with a low conical foot with concave depression (Pl. LXXXVIII, Fig. 722).

As regards some fragmentary bottoms one cannot say definitely whether they have belonged to wheel-turned vessels, as the vessel-walls are so uneven. One of these is the coarse vessel no. 14 A I, with a bottom-diameter of 11.5 cm and a wall-thickness of up to 1.3 cm. One bowl is 9.7 cm in height, with a bottom-diam. of 8 cm and an original width of mouth amounting probably to 21 cm. Fragments of red, not definitely wheel-turned vessels from layer I and red unpainted sherds from layer III are difficult to distinguish from one another.

14) From A I derive about 10 large fragments of wall, from a vessel with light red brick colour in the ware, outwardly, stroke polished in deep red colour.

15) 17 coarse wall-fragments of ware that is sometimes red and burnt right through, sometimes more greyish black in section. These sherds are ornamented with closely running parallel flutings, drawn with a comb. Sometimes the fluting is criss-crossed and has been produced with comb-teeth of different breadths. Sometimes there are rows of comb-impressions together with the flutings. The surface colour is brown in different shades. Sometimes the sherds are sooty. Several sherds derive from A I, but some have probably been marked C III and E III by mistake. (Pl. LXXXVIII, Fig. 723 a-c).

A little *slate plate* with marks of writing was found in layer I. The letters seem to be Arabian characters carelessly scratched (Pl. LXXXVIII, Fig. 724).

Fragments of a big water mussel, *Cristaria herculea*, Middendorf, were discovered in A II. This mussel lives in Eastern Siberia, Amur and North China. It must have been imported in Mussulman time (determined by dr Odhner).

CHRONOLOGY AND RACE

When it comes to dating the Mussulman finds the coins are a useful guide. These, with one certain exception, all date from the 8th century A. D. Nine coins from the little hoard derived from the years 701—714, one from 722 and two from 773—782. In the year 716, under the government of the Umayyad caliph SULĒMAN, the Caliphate made an advance on Tabaristan and Gorgan, the turkish chieftain of which was Sūl (His name seems to be preserved in the names of pulu (Sulu) tepé and pūl tepé'). The advance was led by YAZĪD, MUHALLAB's son, the governor in Khorassan; but it was not of any fundamental importance. In the year 715, YAZĪD resided in Wāsiṭ as governor for Irak. It is possible that a number of Umayyad coins found their way to the Turkoman steppe already in connection with this campaign. During the latter half of the 8th century, after the Abbasids had occupied the Caliphate, revolutionary communistic movements appeared in Gorgan. AL HĀDĪ, the son of the Caliph al MAHDĪ and

a brother of HĀRŪN ar RASHĪD, himself led the fighting against the rebels in Gorgan in 785. Some years later HĀRŪN's foster-brother FADL, the Barmecide, was made governor of the Caspian provinces and Khorassan. The inhabitants of these provinces were not firmly established in the Islamitic faith.

ZOROASTER and MAZDAK still had numerous adherents in Mazanderan and Gorgan, though the Alidic propaganda also found fruitful soil in these tracts.

The small lathe-turned spindle-whorls of bone correspond exactly to Coptic or Arabian whorls in Egypt.¹ The ornamentation, also here, consists chiefly of point-circles and strokes, inlaid with black or red pigment. WULFF has not been able to give any dating for the Egyptian spindle-whorls, but they belong to the same cultural circles as the sculptured bone dolls that are common in Egypt and that have also been found in Iran and Palestine, sometimes in a different form.² It is evident that the connections between Byzance and the Sassanid Empire were not only warlike, though it is mostly of this that one hears; and they continued also during post-Sasanid time. Spindle-whorls of the same kind are also known from Bilarsk in the Bulgar kingdom at the Volga (A. M. TALLGREN, Coll. Zaoussailov II, Pl. VI, 20).

The little Byzantine bronze buckle cannot be dated later than the coins, it is even probable that it goes back to the 7th century. The shape of the frame reminds one of a small buckle of which Fr. SARRE has reproduced a picture, and which on the strength of its bird-image may be ascribed to the Sasanid culture.³ Another is found in Ctesiphon, the Sasanian Capital (Syria XV 1934, Pl. VI a) This Shah Tépé buckle, however, belongs most nearly to the Byzantine type that is found in Italy and the East Mediterranean basin.

I have no clear idea as to how the finger-rings should be dated. The inscription »Ya Muhammed, ya Ali» on one of them would of course indicate that it had been worn by a Shi'a adherent. Present-day Turkomans, on the other hand, are Sunnites. Nearer to Asterabad, however, there are pure Persian villages.

As has been mentioned in the description of the glass fragments, these resemble vessels that have been found elsewhere in Iran and dated by C. J. LAMM to the second half of the first millennium A. D. — chiefly to the period between 600 and 900 A. D. Finds corresponding to the vessel fig. 682 with its high neck and spout are known by me from the Caucasus, where a similar vessel was found in Balta.⁴ Grave-finds from this place belong in the main to the period about 800 A. D.

¹ O. WULFF, *Altchristl. u. mittelalterliche Bildwerke* I, Pl. XXIV, esp. 587, 589, 604, 607, 608.

² T. J. ARNE, *Benidoler från Persien*, Figs. 1 and 2 (*Finska Fmf. Tidskr.* XI).

A similar doll has been found in a child-grave from Sassanian time in Susa.

STEPHEN CHAUVET, A propos de deux amulettes en os à décor anthropomorphe (*Bull. de la soc. préh. française* XXXIII, 12, Dec. 1936).

³ FR. SARRE, *Die Kunst des alten Persien*, Pl. 146, 1.

⁴ MAT. PO ARCHEOL. KAVKAZA VIII, Pl. CXIV, 8.

Some of the glazed pottery is rather old-fashioned in character. I have in mind in this connection the vessels with the single-colour blue-green glaze, that so strikingly reminds one of Parthian-Sasanian clay vessels. I do not think, however, that the sherds are so old. Pottery akin to this is of course known from Samarra in Mesopotamia,¹ where it belongs to the middle of the 9th century A. D. It has also been found in Hira on the Euphrates, to the south of Baghdad, together with glazed graffito ware and unglazed vessels with engraved decoration.²

Of interest is also the ware covered with yellow-white, brown and green glaze, that evidently originated under Chinese influence in the time of the T'ang dynasty (Figs. 700, 701). (Cf. A. U. POPE, *Ceramic art in islamic times; Imitations of T'ang splash wares*, *A Survey of persian art*, vol. II, text, p. 1499).

Also this sort of pottery is known from Samarra; and the eastern influence is noticeable later in Byzantine pottery. In Makran, in Persia, far to the south-east, Sir AUREL STEIN found pottery akin to this in Qalât-i-Jamshîd; and the style of this glazed ware is considered by Mr R. L. HOBSON to be peculiar to Persian pottery of the ninth to the tenth centuries.³

While the Mussulman finds in Shah Tépé seem chiefly to belong to the 8th and 9th centuries, I think it probable that the grave G I s⁴ is younger, from about 1000 B. C. or perhaps still later. The earrings agree closely with such of silver or tin that have been found in the Caucasus in grave-yards, where finds of other objects have been made, e. g. an enamelled »clay egg» from the beginning of the 11th century⁴ and a pair of scissors of the same kind as those found in the Shah Tépé grave. A somewhat later period is indicated, moreover, by the destruction of the burial tower in the outer edge of which the grave was found. It was an isolated woman's grave with accompanying ornaments and implements, something that was otherwise of rare occurrence in this place. One might even be justified in assuming that the woman was a heathen stranger.⁵

The skeletons that were found in Shah Tépé's Mussulman stratum belonged to quite a different race from that of the copper age. Professor CARL M. FÜRST has published an anthropological study of these younger skeletons.⁶ Of about 80 skele-

¹ FR. SARRE, *Die Keramik von Samarra*, 1925, p. 25; R. L. HOBSON, *A Guide to the Islamic Pottery of the Near East*, p. 2 (Brit. Museum).

² TALBOT RICE, *The Oxford Excavations at Hira* (*Ars Islamica* I, 1).

³ AUREL STEIN, *Archaeological Reconnaissances in North-western India and South-eastern Iran*, Pl. IV, p. 86.

⁴ ALJBOM RISUNKOV V OTČETACH ARCHEOL. KOM. ZA 1882—98, FIG. 839, from Andriukovskaja stanitsa in the Majkop-district. MATERIALY PO ARCHEOL. KAVKAZA I, Pl. XIII, 18, from Natukhajskaja stanitsa.

⁵ C. M. FÜRST has measured a thigh bone of the skeleton, and on the strength of this assumes that it was a man 152,8 cm tall. (C. M. FÜRST, *The Skeletal Material etc.*, Table C, Measurements of the long bones etc.)

⁶ CARL M. FÜRST, *The Skeletal Material Collected during the Excavations of Dr T. J. Arne in Shah Tépé at Astrabad-Gorgan in Iran* (Reports from the scientific expedition to the north-western provinces of China under the leadership of Dr Sven Hedin, no. 9).

tons nearly half had been brought home; and of these, 30 were so well-preserved that 22 crania and the long bones of 15 individuals could be measured or described. »It is of special interest to note that in this collection of crania 10 of the 22 described are asymmetrical, and that the right side is smaller in 9 of them, i. e. there has been a pressure from the right and back, upwards towards the left, while in only one cranium is the asymmetry in the opposite direction.»

Of 17 crania, only three are mesocranic, while the remaining 14 are brachycranial. More than half of the latter, i. e. 7 specimens, have a length-breadth index of 85 and more. The length-height index varied between 67 and 85, with 9 hypsicranial skulls; the breadth-height index varied between 83 and 99, with 8 metriocranial skulls. The last-mentioned measurements refer to only 13 crania. Professor Fürst considered it »fairly safe to assume that at least the majority of the skulls from the graves in the top layer belonged to what HADDON calls *Turki*, which v. EICKSTEDT considers to be the same as his Turanian race.» The skulls from the top layer were not all similar to one another. Four crania diverged somewhat from the Turanian-Turki type.

»All indications tend to show that the asymmetry of the brachycephalic skulls implies that they have belonged to a nomadic people or their descendants. It would seem rather evident that the infant's head was for a long time pressed continually and always in the same manner on some hard bedding in some kind of 'cradle'. The occipital curve index of Shah Tépé Mussulman skulls differs distinctly from that of the Armenian skulls. The Astrabad skulls have no offset at lambda, but a very well-developed occipital eminence as compared with the straight occipital line of the Armenian skulls. The supra-orbital is but slightly developed, and there is nothing else to contradict the conception that at least most of the skulls denote that their owners belonged to v. EICKSTEDT's Turanian race.

One may thus assume that the Mussulman skeletons from Shah Tépé represent a Turkish people that had been converted to Islam in the 8th century. In all probability these people were the Ghuzz or Oghuzz, whose country stretched at least from the mouth of the river Gorgan to the north between the Caspian and the Aral Seas and in the north-west to the Volga, in the east all the way to Čimkent. In the time of Ibn Faḍlan (922) the northern Ghuzz were still heathens, but it is probable that in the southern frontier region they were converted to Islam rather earlier, and perhaps went over in part to a more settled way of life.¹

Another hypothesis is that the Mussulman graves in Shah Tépé were dug by short-skulled Iranians from Khorassan. In our days the plateau-country is inhabited by both dolichocephalic and brachycephalic types. Dr HENRY FIELD² mentions three different brachycephalic types that are found there: 1) concave or

¹ T. J. ARNE, Ibn Faḍlans resa till Bulgar (Fornvännen 1941).

² H. FIELD, The Physical Characters of the Modern Inhabitants of Iran (The Asiatic Review, 1932); and Contributions to the Anthropology of Iran, 1939, p. 436.

straight-nosed, square-jawed people with round heads — possibly proto-Alpine; 2) markedly convex-nosed people with high-vaulted heads and flattened occiputs — »Armenoid type»; 3) convex-nosed, long-faced, hypsicephalic people, possibly derived from Turkestan brachycephalic admixture with no. 1).

The Shah Tépé crania would thus show a close kinship with nos. 1) and 3) of these brachycephalic types of the plateau country, who on their side indicate a very early »Turki» influence. (*Izvestija sredne-aziatskogo komiteta*, III, 1928.)

From certain points of view this latter hypothesis seems more probable. The brick-built grave-tower appears on the whole to have been erected by real Iranians, with experience in the arts of brick-making and building; and the finds, moreover, bear no particular »Turanian» stamp. But it is possible that the Turks in the frontier-region had been quickly iranized in cultural respects.

Who can have destroyed the Imam Zadé that once stood on Shah Tépé? It must have taken place rather early, and it is conceivable that the war-like Ghuzz-Turks did it in the course of their feuds. If the grave found in the wall of the tower should be of later date than that suggested here — and the earrings may without doubt be of a long-lived type — then it is also conceivable that the tower was destroyed in the 13th century, during the period of the Mongol conquest. The Abaghā coin might give some indication of this.

The 8 crania that were excavated by Dr FREDERICK WULSIN in the topmost layer at Tureng Tépé, and that were dated by him to some epoch between 1000 B. C. and 1200 A. D. should obviously also be ascribed to the older Mussulman time. Their length-breadth index varied, except for one cranium with the index 78.3, between 81.8 and 89.¹

The present Turkomans are regarded by most writers² as being predominantly dolichocephalic. A suppression of the brachycephalic element, that about 800—1000 A. D. inhabited the Turkoman steppe, must thus have taken place — perhaps by a revival in strength of the ousted primitive population.

¹ H. FIELD, *Contributions to the Anthropology of Iran*, 1939, I, pp. 270 et seq.

² L. OŠANIN, *Nekotorye dopolnitelnye dannye k gipoteze skifosarmatskogo proischoždenija turkmen*. (*Izvestija sredne-aziatskogo komiteta*, III, 1928).

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666.	a—d. Spearheads, daggers and copper celt from Tureng Tepé	LXXX
667.	a, b. Dagger from Tepé Hissar	LXXX
668.	Silver «cylinders» from 2 sides and twelve silver dirhems from the 8th Century A. D. (E II, no. 597) 1/1	LXXXI
669.	Persian-mongol silver coin minted for Abāgā A. D. 1265—1272. (H I, no. 1086)	LXXXI
670.	Bronze buckle of byzantine type (F I)	LXXXI
671a—c.	Three bronze finger-rings (a = C I, no. 151; b = A II 7, no. 31; c = A I, no. 2)	LXXXI
672.	Bronze sheet with iron nails (F I) 1/1	LXXXI
673.	Bronze mounting to the handle of a knife (F I, no. 662) 1/1	LXXXI
674.	Iron dish (H I3, no. 1201) 3/5	LXXXI
675a—d.	Iron scissors, hook and knife (G I S ⁴ , no. 965) 1/3	LXXXII
676.	Two earrings of bronze wire (G I S ⁴ , no. 964) 1/1	304
677.	Seven glass-beads (G I S ⁴ , no. 966)	LXXXII
678.	Hoe or celt of iron (A I 20, no. 10) 1/2	LXXXII
679a—d.	Four spindle-worls of bone (a = A II 30, no. 70; b = E II, no. 604; c = E I, no. 518; d = E I, no. 508) 1/1	LXXXII
680.	Small vessel of thin green glass (E I, no. 605) 1/1	LXXXII
681.	Black-green glass vessel (E I, no. 606) 3/4	LXXXII
682b.	Cylindrical neck of glass vessel with open spout and handle, 2/3	LXXXII
683.	Neck of green glass vessel with longitudinal depressions (C I 16 ?) less than 1/1	LXXXII
684.	Neck of glass bottle with disc-shaped rim, c. 2/3	LXXXII
685.	Green handle of glass with mouth-part (A I) 3/5	LXXXIII
686a, b.	Curved glass handle with folded upper part (A I)	LXXXIII
687.	Fragmentary glass-handle with knob (H I) more than 1/2	LXXXIII
688.	Cup-handle of glass (H I, no. 1049) 1/2	LXXXIII
689.	Handle of green glass with portion of the rim (H I) 3/5	LXXXIII
690.	Rifled glass with thickened rim (A I, no. 4) 2/3	LXXXIII
691.	Piece of green glass with raised ribs, 2/3	LXXXIII
692a—d.	Thickened rims of blue glass	LXXXIII
693.	Bottom of glass with radiating curved flutings 1/2	LXXXIII
694.	Bottom fragment of glass with curved flutings and round dents 1/2	LXXXIII
695.	Wide thin bottom-fragment of glass, 1/2	LXXXIII
696.	a, b. Bottoms of glass with raised ring around the middle 2/3	LXXXIII
697.	Flat knob-shaped bottom of glass 2/3	LXXXIII
698.	Flat and massive bottom of glass, thickened at the edge 4/5	LXXXIV
699a—g.	Seven sherds covered with blue-green or green glaze, 1/2 and less.	LXXXIV
700a, b.	Pottery sherds with greenish yellow-white, brown and green glaze, less than 1/2	LXXXIV
701a—e.	Five sherds of white-grey or pinkish ware with glaze and ornaments in yellow- white, green and brown c. 1/2	LXXXV
702a—d.	Four sherds of grey and pink ware with yellowish glaze, green and blue orna- ments and incised patterns 1/2	LXXXV
703.	a—c. Three sherds of pink ware with concentric circles, foliage and arabian characters 1/2	LXXXV
704.	Sherd with brown flower 1/2	LXXXV
705.	Sherd with circle and line ornamentation 1/2	LXXXV

Fig.		Page or Plate
706.	Fragmentary bowl of yellow-grey ware with white glaze and green spots c. 1/3	LXXXV
707a.	Bowl with 2 horizontal lugs and decoration of encircling impressions (C I 4, no. 921) 1/4	LXXXVI
707b.	Mouth of bowl with decoration of impressions c. 1/2	LXXXVI
708.	Fragment of bowl with spout and decoration, more than 1/2	LXXXVI
709.	Convex lid of red clay with double-arched handle (C I S ⁴ , no. 121) c. 1/3	LXXXVI
710.	Convex lid of red clay with concave knob on top (A I 12, no. 82) 1/3	LXXXVI
711.	Lid with knob of yellow-grey clay (C I 13, no. 110) more than 1/2	LXXXVI
712.	Lid with knob of red clay (A I), more than 1/2	LXXXVI
713.	Clay lamp (H I S ² , no. 513), more than 1/2	LXXXVI
714a, b.	Two high necks with handles of tall jars (A I 10, no. 8; C I, S ⁸ a, no. 114).	LXXXVI
715.	Mouth of neck of tall jar c. 2/3	LXXXVII
716.	Neck and upper part of red vessel with burnished ornaments 1/2	LXXXVII
717.	Fragment of cup with circle-shaped handle, round in cross-section 1/2	LXXXVII
718.	Handle (or foot) of vessel with flattened, upwards bent end 4/7	LXXXVII
719a, b.	Fragments of vessels with incised ornaments, rope-pattern and arched handle c. 1/2	LXXXVII
720.	Bottom with ring-shaped elevation round the edge	LXXXVIII
721.	Bottom with »stand-ring» (D II) 1/2	LXXXVIII
722.	Bottom showing low conical foot with concave depression 1/2	LXXXVIII
723a, b, c.	Three wall-fragments with comb-drawn flutings 2/5	LXXXVIII
724.	Piece of slate with arabic characters (?)	LXXXVIII
725a—c.	Three pieces of red pottery turned on the potters wheel	LXXXIX
726.	Squat, rounded curved sooted jar (E II 22, no. 1734) 1/3	LXXXIX
727.	Small sooted jar (cooking vessel?) (E II 15, no. 876) 1/3	LXXXIX
728.	Globular vessel with neck (E II 10, no. 712) 1/4	LXXXIX
729.	Spouted rounded bowl (F II 5, no. 973) 1/3	LXXXIX
730.	Biconical carinated jug with cylindrical neck and broken spout (F III 1, no. 1328) 1/2	LXXXIX

ERRATA

- Page 75. Fig. 64. Instead of S⁴⁶ (in II a¹) read S⁴.
- » 106. Line 5 from above, to inv. no. 667 add 666.
- » 108. » 25 » above, » » » 1328 add Pl. LXXXIX f.
- » 110. » 11 » above, » » » 973 add Pl. LXXXIX e.
- » 144. Second column, line 10 from below, instead of 396 read 436.
- » 148. » » » 9 » » » botlet read bottle.
- » 149. First column, » 10 » » read: hatchings.
- » » » 11 » » » : patterned.
- » 150. Second » » 11 » » instead of 339 read: 539.
- » 152. First » » 17 » » » 601—604 read: 602.
- » 152. » » » 20 » » » 601—604 » : 603—605.
- » 152. » » » 23 » » read: 605 a, b, c.
- » 152. Second » » 5 » » above add: Pl. XLI, fig. 275 and Pl. XC.
- » 155. » » under line 1 add: 1515. White flat egg-shaped bead of liver-limestone.
- » 163. First column, lines 1 and 4 omit: Fig. 271.
- » 169. Line 22 from above read: there *are* some.
- » 195. » 3 » below » : 18 specimens.
- » 201. » 1 » above » : no. 666.
- » 201. » 4 » below » : 642 b.
- » 255. » 15 » below » : Figs. 1—22.
- » 258. » 11 » above » : the groove.
- » 261. » 9 » below » : uncertainty.
- » 270. » 9 » above instead of 5.65 read: 6.65.
- » 290. » 12 » » omit: (no. 1515 ED)
- » 291. » 6 » above after *running* add longitudinally.
- » 293. » 14 » » omit 15.
- » 295. » 18 » below instead of a—d, read a—c.
- » 297. » 18 » » omit 16.
- » 301. » 12 » above instead of G II S⁴ read: F II S⁴.
- » 301. » 11 » below » » verically, read: vertically.
- » 303. » 1 » » » 658 and 659, read: 659 and 658.
- » 332. » 3 » » » 671 c read: 671 b.
- » 332. » 5 » » » 671 b » : 671 c.
- » 335. » 6 » » omit (Pl. LXXXIII, Fig. 692 a—d).
- » 335. » 12 » » add (Pl. LXXXIII, Fig. 692 a—d).



Fig. 1. Qyzyl Alan



Fig. 6. Tureng Tepé



Fig. 7. Mound near to Yilghan Tepé

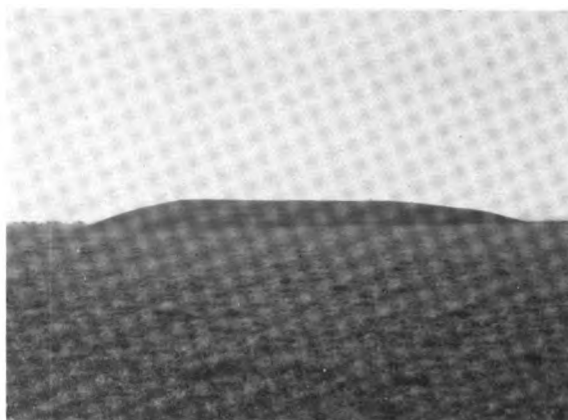


Fig. 8. Shah Tepé



Fig. 9. Shah Tepé



Fig. 10. Shah Tepé



Fig. 17. A III, 1



Fig. 19 a. Walls in A II



Fig. 19 b. Walls in A II



Fig. 23. A I



Fig. 26 b. Wall and S7 in C II b



Fig. 28. Walls in C II b



Fig. 20. S¹⁰, S⁸, S⁶ in C II b



Fig. 36 a. E III, 1

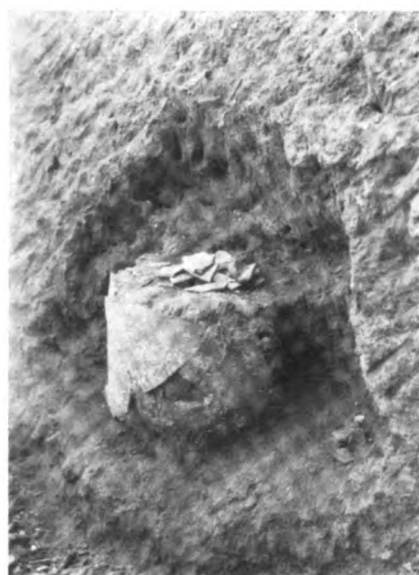


Fig. 36 b. E III, 7



Fig. 40. Shaft E I



Fig. 44. F III, 20

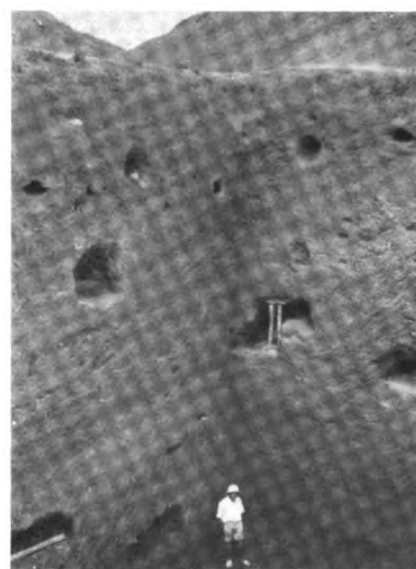


Fig. 42. Shaft E, cross-section



Fig. 45 a. F III S²— S⁷



Fig. 46. F III S¹²— S¹⁶



Fig. 47. F III, 17



Fig. 50 a. F II, 6



Fig. 50 b. F II, 6



Fig. 52. F I S²



Fig. 54. Shafts F and G

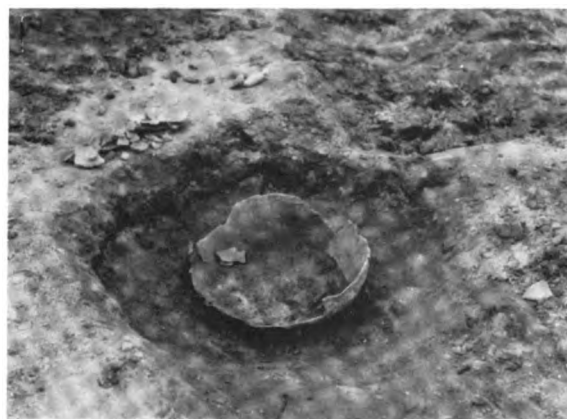


Fig. 58. G II, 3



Fig. 61 a. G I with tower in background



Fig. 61 b. Tower in G I



Fig. 61 c. Tower in G I

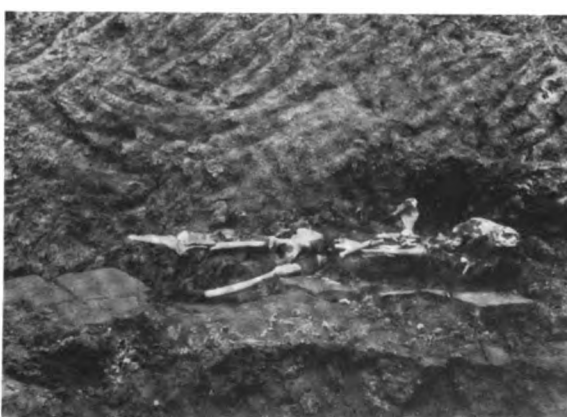


Fig. 62. G I S1



Fig. 63. G I, musselman, grave-yard



Fig. 66. H II, 2



Fig. 67. H II, 6



Fig. 69. H I S²



Fig. 70. H I, 3



Fig. 71. II I

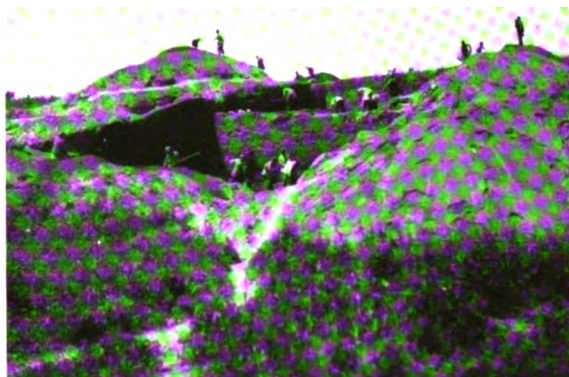


Fig. 72. Shaft B



Fig. 74. B III 8, 20 and S*

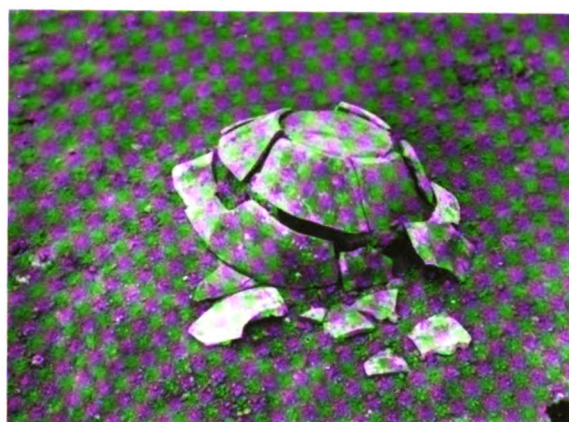


Fig. 75. B III, 1

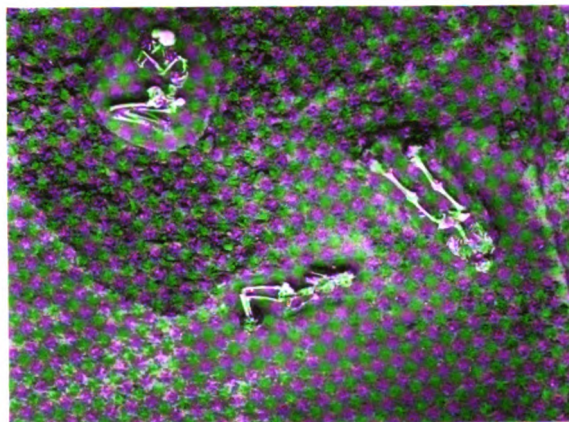


Fig. 76. B III S¹, S², S⁴



Fig. 80. B II, 7 and S⁴



Fig. 81. B I, 7 a, b

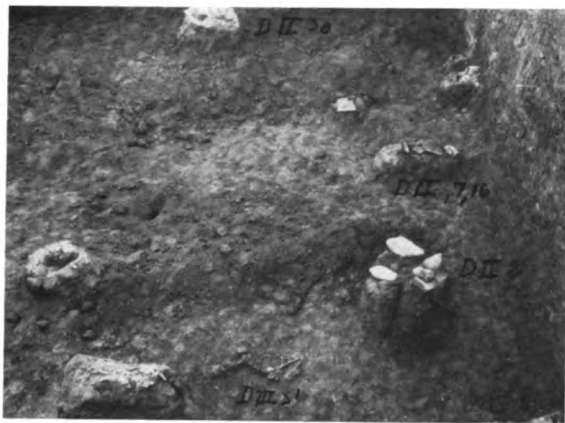


Fig. 85. D III S¹, S². D II, 2, 7, 16, 30



Fig. 88. D II, 2

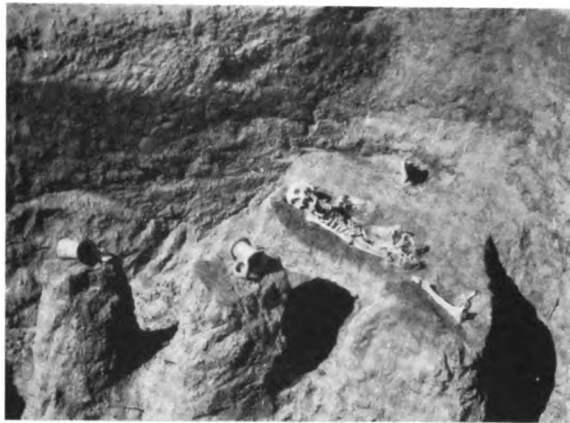


Fig. 90. A I S², S³

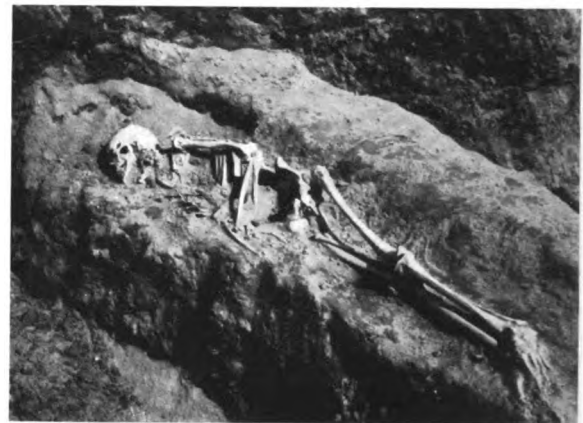


Fig. 91. A I S¹

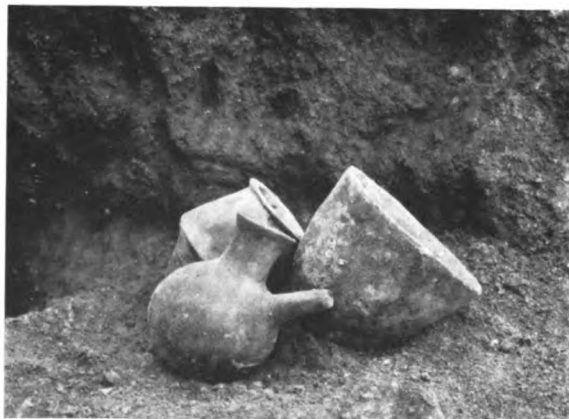


Fig. 92. A II S¹



Fig. 93. A II S²



Fig. 94. A III S⁵



Fig. 95. A III S⁶ b



Fig. 96. B I S⁹ b



Fig. 97. B II S⁵



Fig. 98. B II S⁶



Fig. 99 a. B II S⁷



Fig. 99 b. B II S⁷



Fig. 100. B II S⁸



Fig. 101 B II S⁹



Fig. 102. B II S¹³

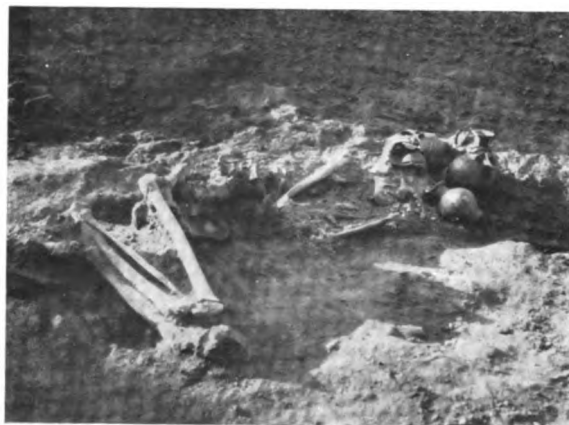


Fig. 103. B II S¹⁶



Fig. 104. B II S¹⁸

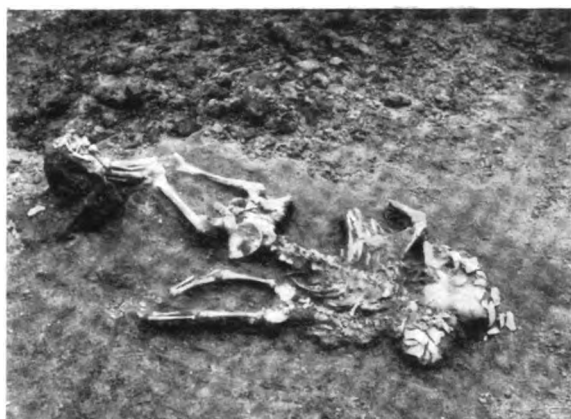


Fig. 105. B III S²

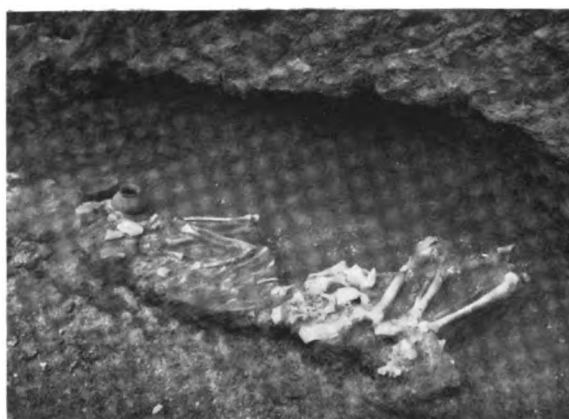


Fig. 106. B III S³



Fig. 107. B III S⁶



Fig. 108. C I S¹



Fig. 109. C II S²



Fig. 111. C II S² b



Fig. 112. C II S⁶, S⁸



Fig. 113. C II S⁷



Fig. 114. C II S⁶, S¹⁰ and others



Fig. 115. C II S¹⁰



Fig. 116. C II S¹²



Fig. 117. C II S¹⁹



Fig. 118. C II S²⁰

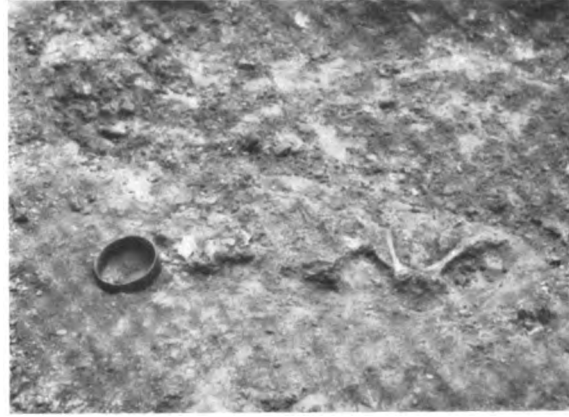


Fig. 119. C II S²¹

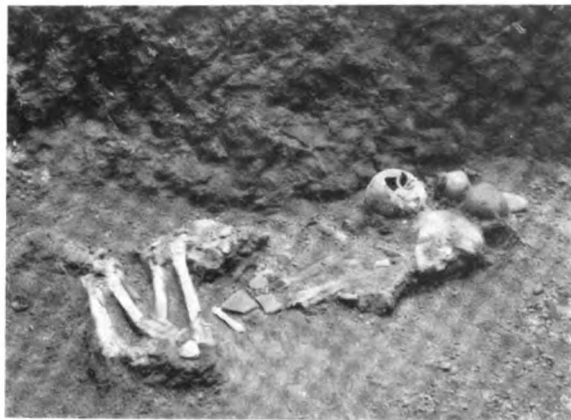


Fig. 120. C III S¹

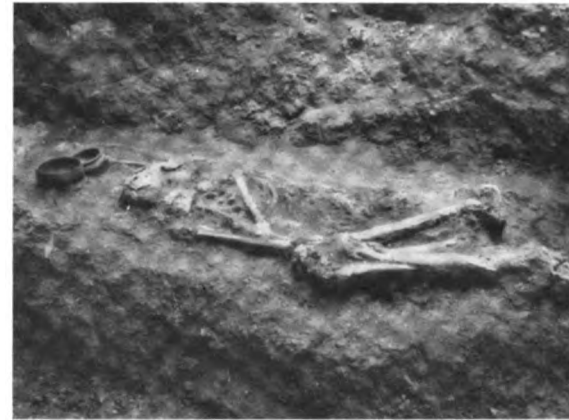


Fig. 121. C III S²



Fig. 122. D III S¹



Fig. 123. D III S²



Fig. 124. E I, probably S¹, S², S¹¹



Fig. 125. E II S¹



Fig. 126. E II S²



Fig. 127. E II S³



Fig. 128. E II S¹⁰



Fig. 129. E II S¹¹



Fig. 130. E II S²



Fig. 131. E II S¹



Fig. 132. E III S¹



Fig. 133. E III S²



Fig. 134. E III S¹



Fig. 135. E III S²



Fig. 136. E III S⁶



Fig. 137. E III S⁷



Fig. 138. F II S⁸



Fig. 139. F II S⁹



Fig. 140. F II S⁵



Fig. 141. F III S¹



Fig. 142. F III S²



Fig. 143. F III S³⁻⁷

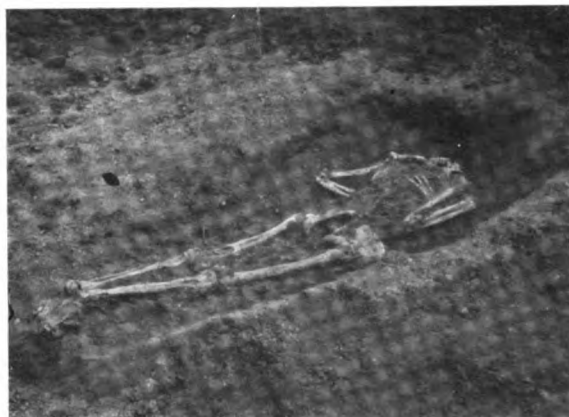


Fig. 144. F III S¹⁰



Fig. 145. F III S¹⁷

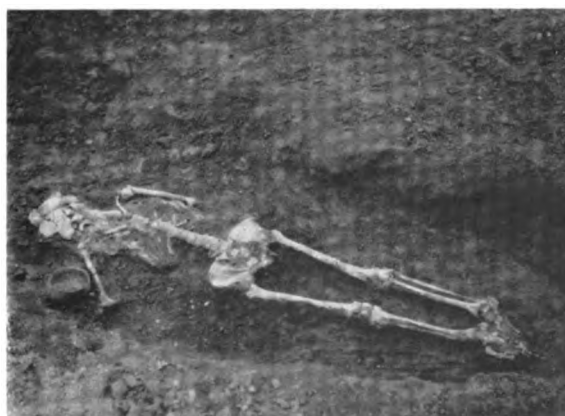


Fig. 146. F III S¹⁸



Fig. 147. F III S¹⁹

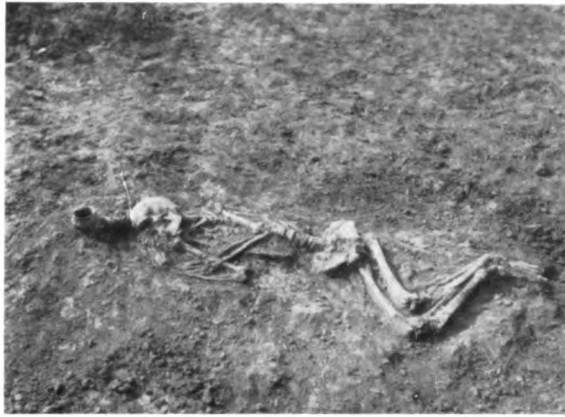


Fig. 148. F III S²¹



Fig. 149. G II S¹

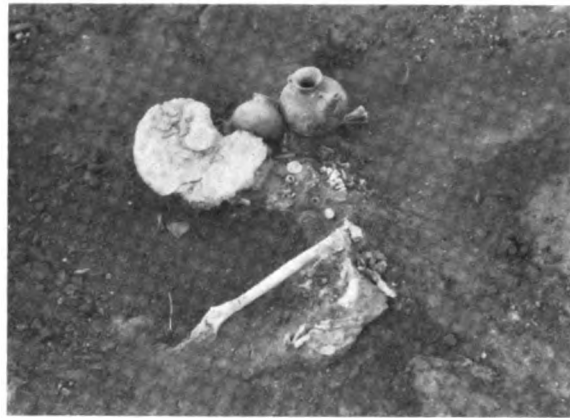


Fig. 150. G II S²



Fig. 151. G II S³



Fig. 152. G II S⁴



Fig. 153. G II S⁵



Fig. 154. G II S⁸



Fig. 155. G II S⁹

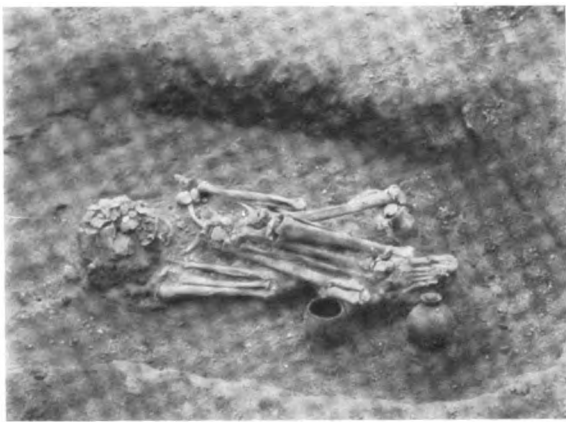


Fig. 155 b G II S¹¹



Fig. 156. G II S¹²



Fig. 157. G II S¹³



Fig. 158. G II S¹⁴, S¹⁵



Fig. 159. G II S¹⁷



Fig. 160. G II S¹⁸



Fig. 161. G III S¹



Fig. 162. G III S²

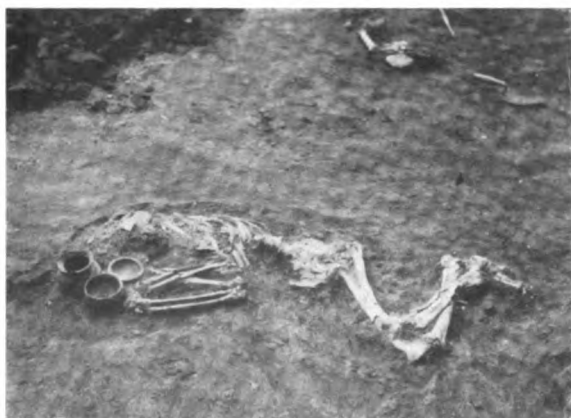


Fig. 163. G III S³



Fig. 164. H II S¹, S²



Fig. 165. H II S²



Fig. 166. H II S¹



Fig. 169. A III S³ 437, 435, 396



Fig. 167 and 168. A III S⁴ a no. 589, 588



Fig. 170. A III S¹ no. 436, 400, 399, 433, 401, 398, 434, 397



Fig. 170 a. A III S¹ no. 400



Fig. 170 b. A III S¹ no. 401

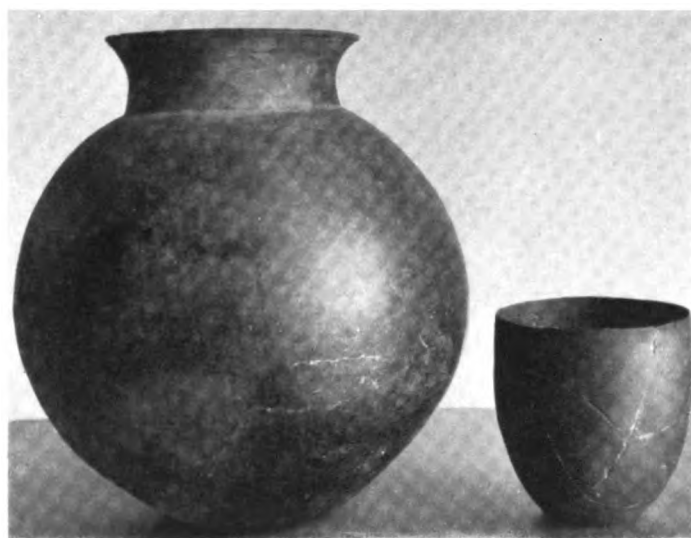


Fig. 172. A III S² no. 308, 309

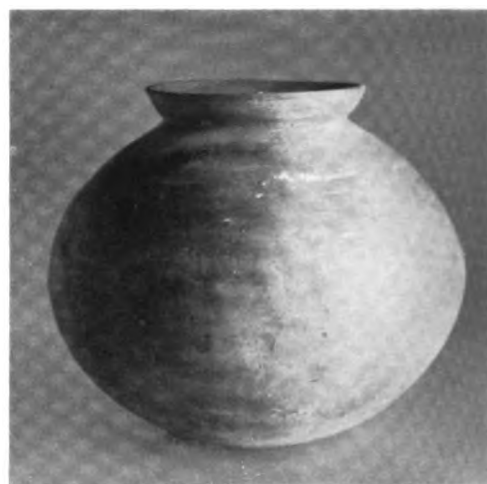


Fig. 171. A III S¹ no. 500



Fig. 173. A III S¹ b no. 544, 545

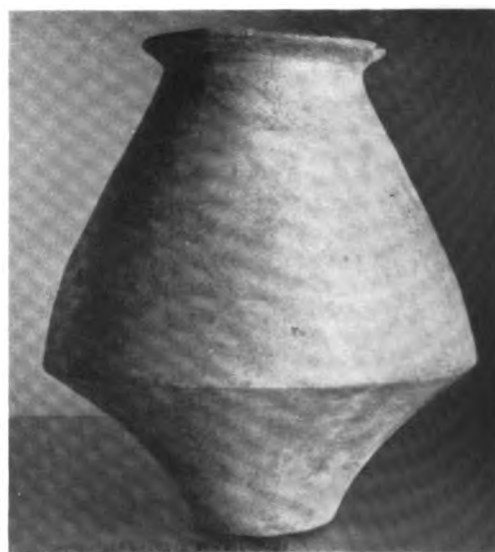


Fig. 174. A II S¹ a no. 720



Fig. 175. A II S¹² no. 719, 715, 716, 718, 717



Fig. 176. A II S⁸ no. 325



Fig. 177. A II S⁶ no. 196, 197, 198



Fig. 180. A II S² no. 43

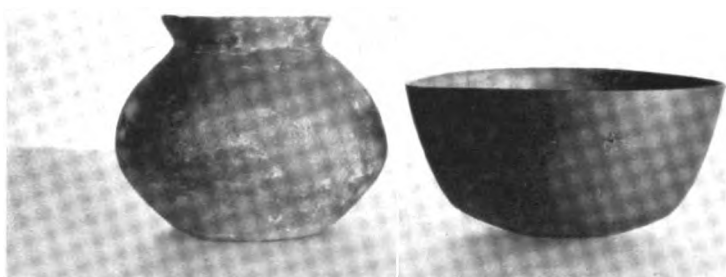


Fig. 181. B III S³ no. 948, 947



Fig. 178. A II S⁵ no. 65

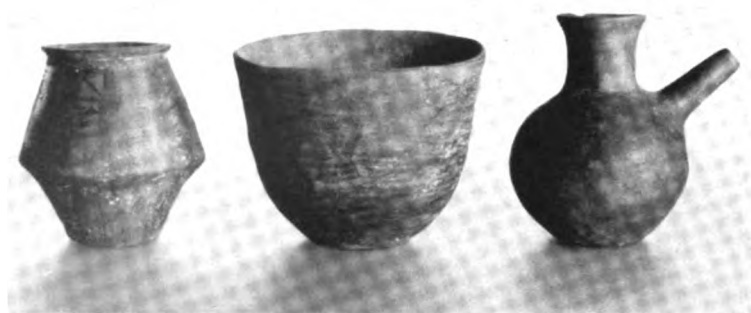


Fig. 179. A II S⁴ no. 61, 63, 62



Fig. 178. A II S⁵ no. 66



Fig. 194. B II S² no. 564, 563, 567, 565, 566



Fig. 194. B II S² no. 568

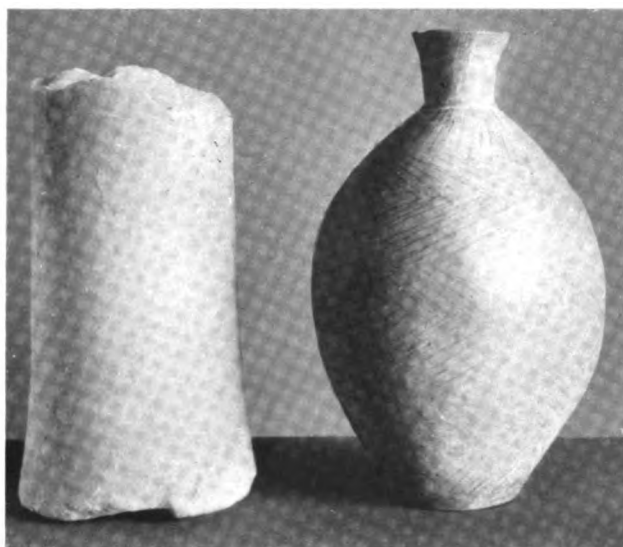


Fig. 195. B II S¹ no. 146, 148



Fig. 198. C II S²¹ no. 1140



Fig. 197. C III S² no. 1171



Fig. 196. C III S¹ no. 669, 668, 670



Fig. 197. C III S² no. 1172

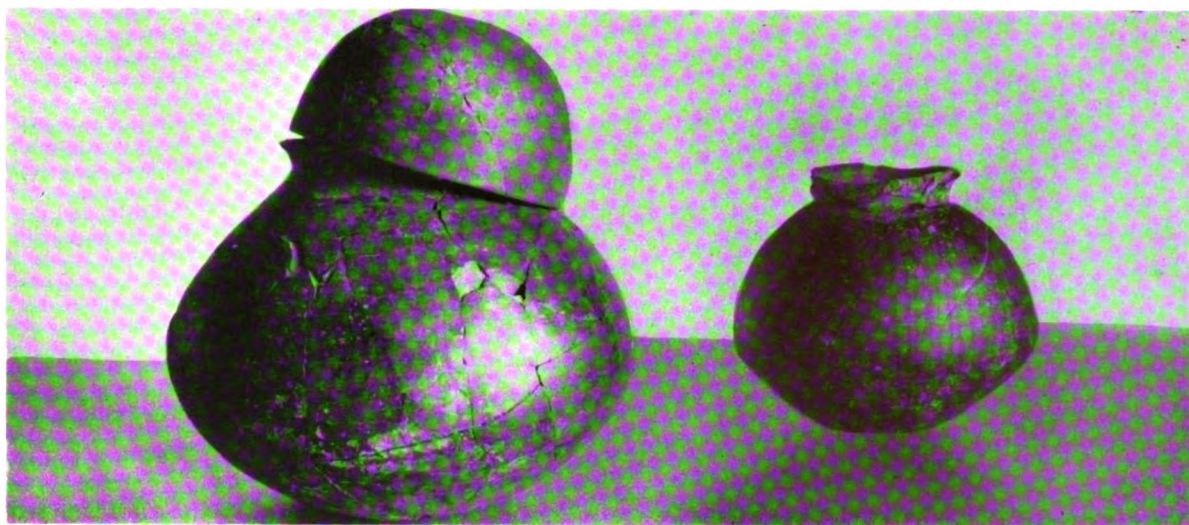


Fig. 199. C II S¹⁵ no. 639, 640, 641

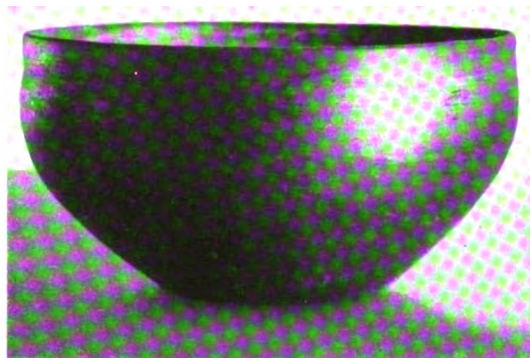


Fig. 201. C II S²⁰ no. 1083

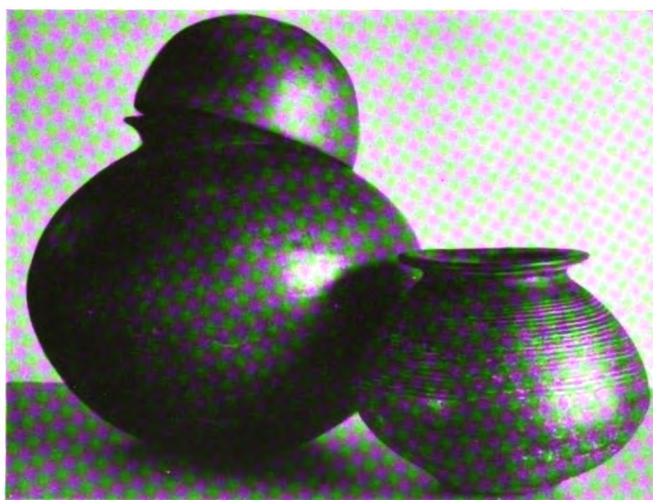


Fig. 202. C II S¹⁴ no. 671, 672, 673

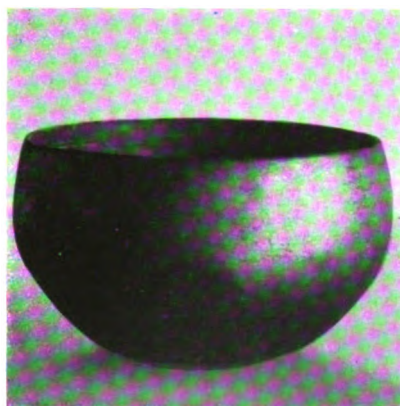


Fig. 200. C II S²² no. 1141



Fig. 203. C II S¹⁹ no. 952, 951, 949, 950



Fig. 206. C II S¹⁰ no. 540, 539



Fig. 207. C II S¹² no. 536, 538, 537



Fig. 204. C II S¹⁶ no. 819, 817, 818, 820



Fig. 205. C II S¹⁷ no. 821, 824, 822, 823

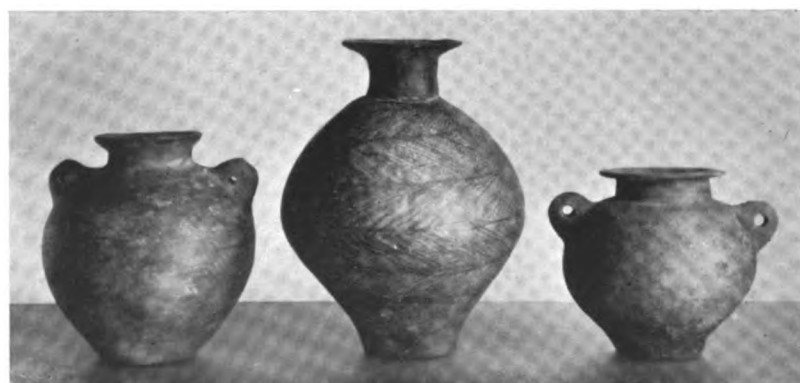


Fig. 208. C II C¹³ no. 635, 634, 636



Fig. 209. C II S⁶ no. 503, 501, 502



Fig. 212. C II S³ b no. 427



Fig. 211. C II S⁸ no. 504, 505



Fig. 210. C II S⁷ no. 543, 541, 542



Fig. 210. C II S⁷ no. 543



Fig. 210. C II S⁷ no. 541



Fig. 213. C II S² no. 265, 267, 266, 268, 264



Fig. 215. D III S¹ no. 405



Fig. 214. D III S² no. 499, 477, 475, 476



Fig. 214 b. D III S² no. 475



Fig. 216 E III S² no. 1306, 1308, 1310, 1307, 1309

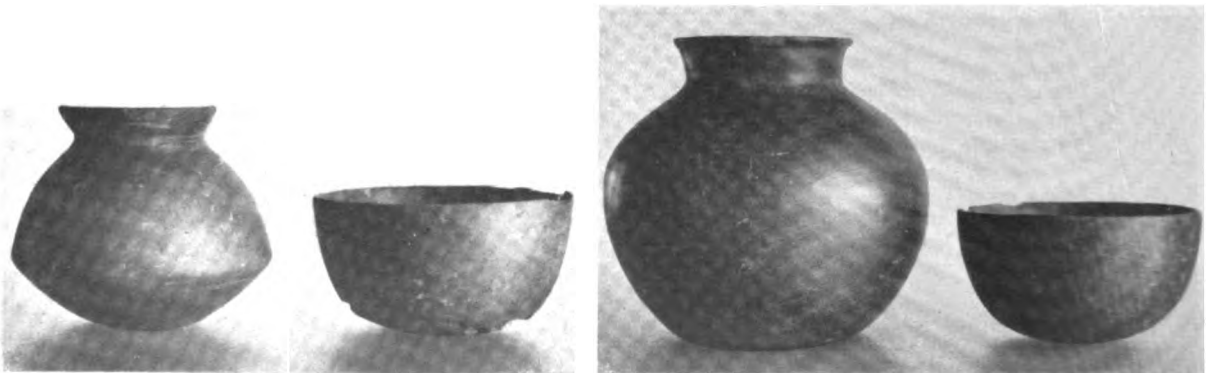


Fig. 217. E III S³ no. 1400, 1489

Fig. 218. E III S¹ no. 1215, 1214

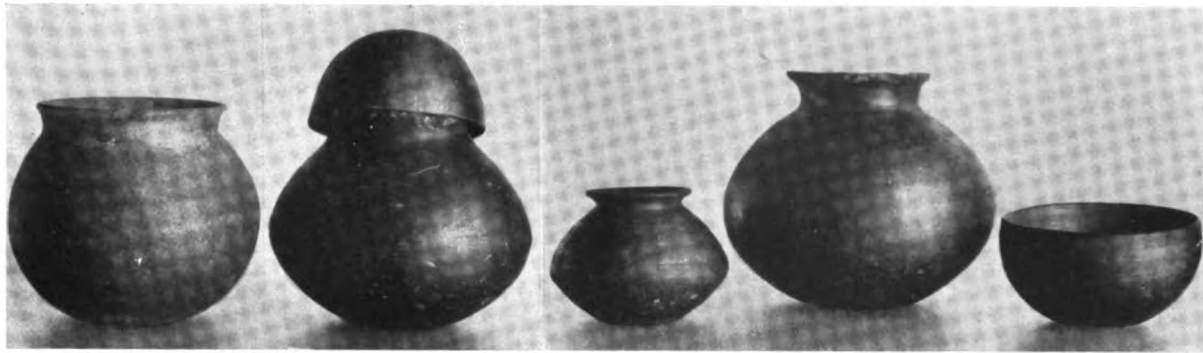


Fig. 219. E III S⁴ no. 1396, 1398, 1397

Fig. 220. E III S¹⁰ no. 1737, 1736, 1735



Fig. 221. E III S⁸ no. 1732

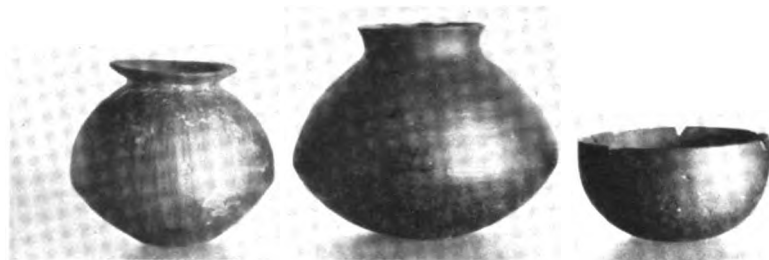


Fig. 222. E III S⁷ no. 1730, 1729, 1728



Fig. 223. E III S⁶ no. 1699, 1705, 1701, 1707, 1704, 1706, 1702, 1700

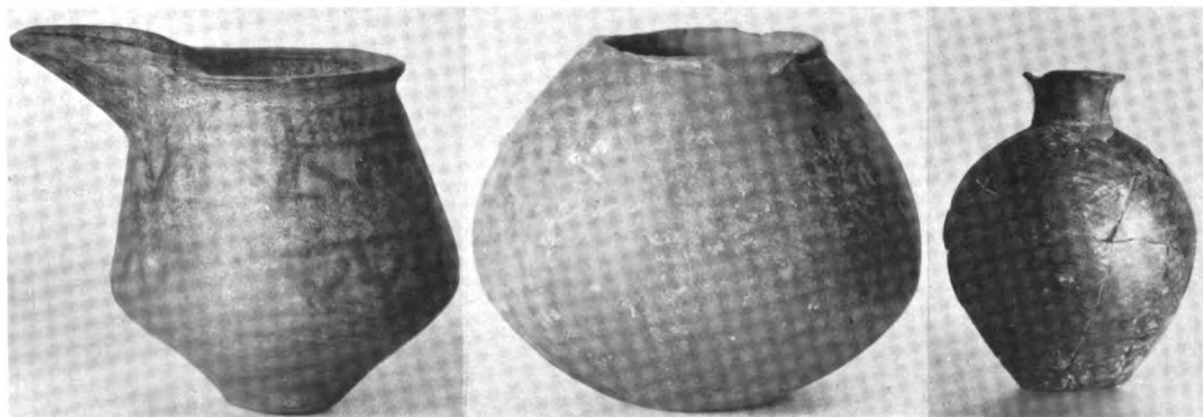


Fig. 223 a. E III S⁶ no. 1701

Fig. 223 b. E III S⁶ no. 1700

Fig. 224.
E III S⁶ no. 1708



Fig. 225. E II S¹⁰ no. 1605, 1603, 1604, 1606



Fig. 226. E II S¹² no. 1074, 1075



Fig. 227. E II S¹¹ no. 1032, 1035, 1034, 1033

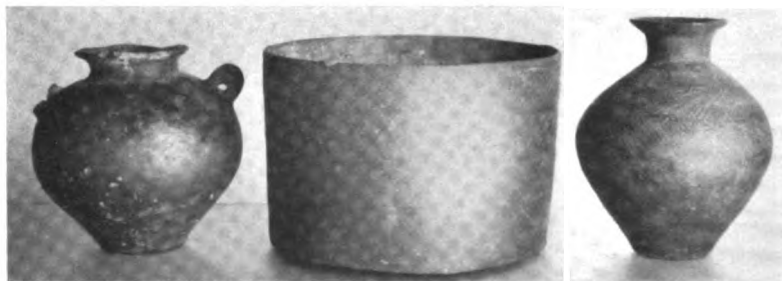


Fig. 228. E II S¹⁰ no. 1030, 1031, 1029



Fig. 229. E II S⁶ no. 953



Fig. 230. E II S⁶ no. 1512, 1513, 1511



Fig. 231. E II S¹⁷ no. 1518, 1516, 1517



Fig. 233. E II S^{*} no. 986, 985, 987



Fig. 232. E II S^{*} no. 878, 877



Fig. 234. E II S¹³ no. 1431, 1430, 1429



Fig. 235. E II S² no. 749, 751, 750



Fig. 236. E II S^a no. 620, 623, 619, 617, 625, 618, 622, 624, 626, 627



Fig. 237. E II S^a no. 663, 665, 664



Fig. 237 a. E II S^a no. 663



Fig. 230. E II S^a no. 630, 631



Fig. 238. E II S^a no. 666, 667



Fig. 240. F III S²¹ no. 1656, 1657



Fig. 241. F III S¹⁹ no. 1647

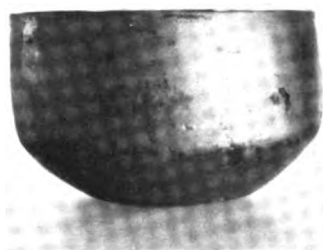


Fig. 242. F III S¹⁸ no. 1646



Fig. 243. F III S⁹ no. 1436, 1437

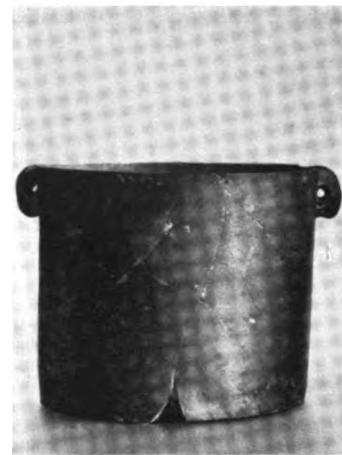


Fig. 246. F III S¹⁶ no. 1629

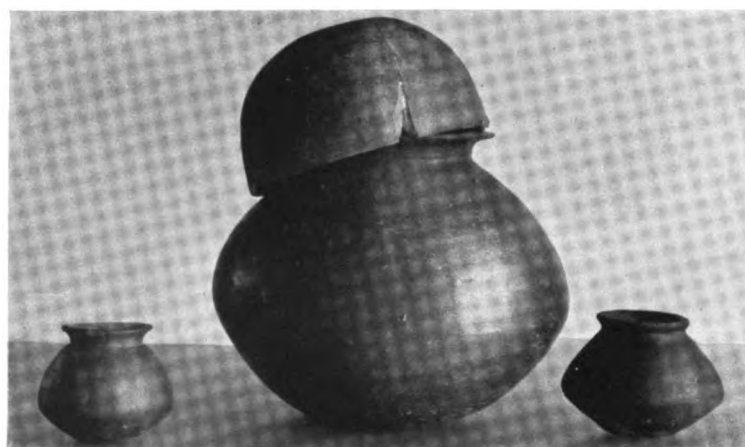


Fig. 247. F III S¹ no. 1326, 1323, 1324, 1325



Fig. 244. F III S² no. 1401, 1402



Fig. 245. F III S¹³ no. 1626, 1628, 1627



Fig. 248. F II S^a no. 1217



Fig. 250. F II S^a no. 1000, 999



Fig. 249. F II S^a no. 1127, 1126 b, a, 1130, 1128, 1129



Fig. 249 a. F II S^a no. 1126 b

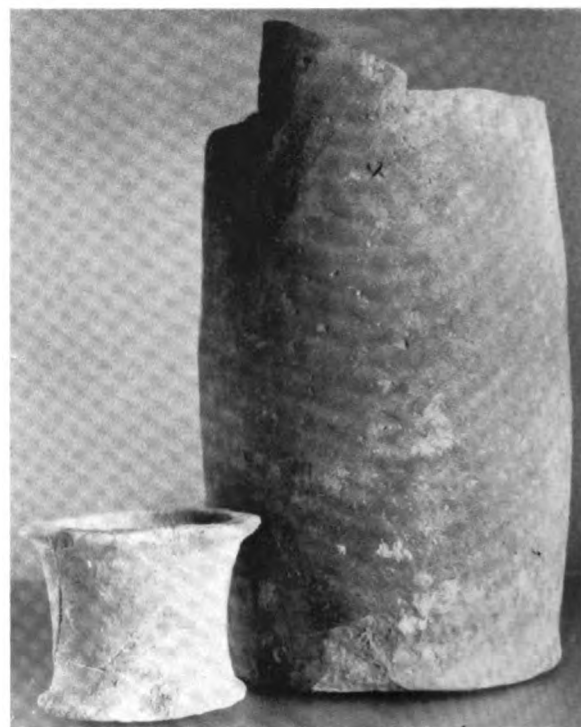


Fig. 251. F II S^a no. 753, 752



Fig. 252. G III S² no. 1697, 1698



Fig. 254. G III S² no. 1427, 1426

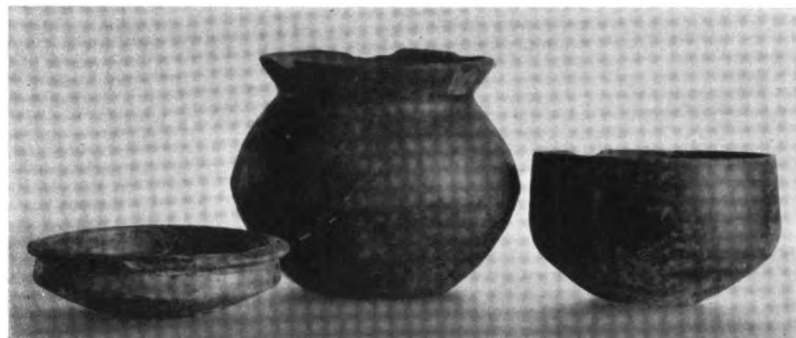


Fig. 253. G III S³ no. 1572, 1571, 1573



Fig. 256. G II S¹ no. 1742



Fig. 258. G II S¹ no. 1302



Fig. 255. G III S¹ no. 1433, 1434



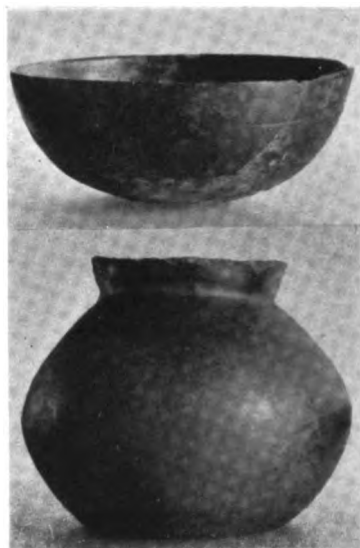


Fig. 257.
G II S¹⁸ no. 1364, 1365



Fig. 261. G II S¹² no. 1247



Fig. 259. G II S¹⁸ no. 1246, 1244, 1245



Fig. 262. G II S¹¹ no. 1189, 1190



Fig. 260. G II S¹⁷ no. 1332, 1331, 1330, 1329



Fig. 264. G II S⁸ no. 1077, 1076, 1078



Fig. 265. G II S² no. 1079

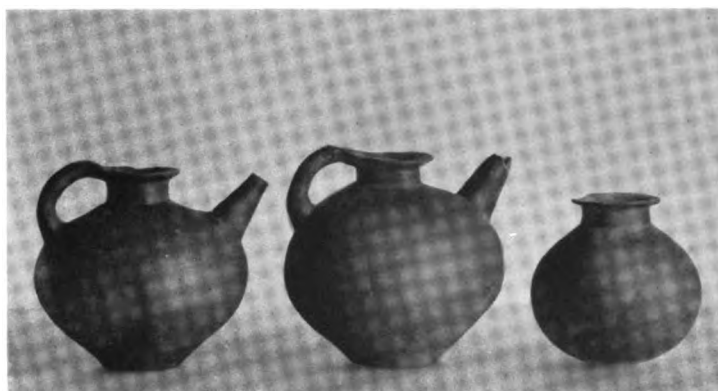


Fig. 263. G II S² no. 1081, 1080, 1082



Fig. 266. G II S² no. 988, 989

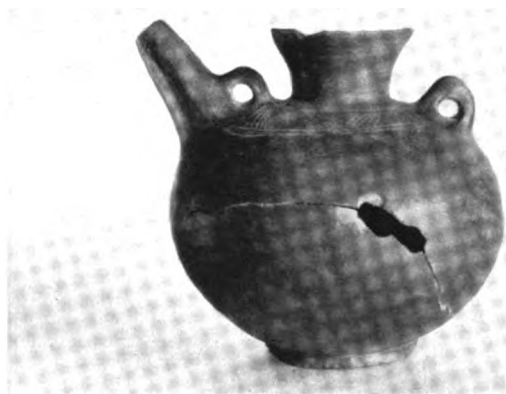


Fig. 267. G II S² no. 835



Fig. 267. G II S² no. 834



Fig. 268. G II S² no. 1004, 1003



Fig. 269. G II S¹ no. 746, 747, 748



Fig. 270. G II S¹ a no 841



Fig. 270. G II S¹ a no. 846



Fig. 271. G II S⁴ no. 984, 983



Fig. 272. H II S² no .1762



Fig. 273. H II S¹ no. 1760, 1761



Fig. 274. H II S² no. 1770



Fig. 275. D III S*

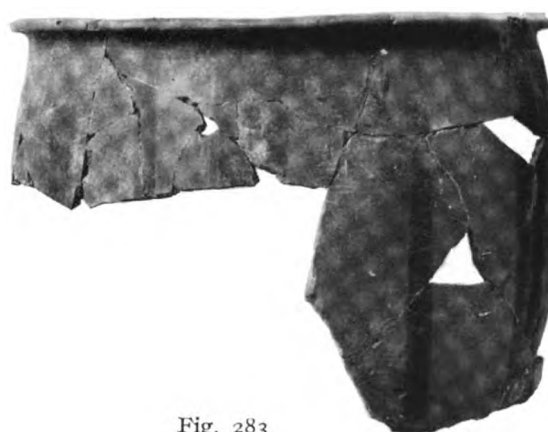


Fig. 283

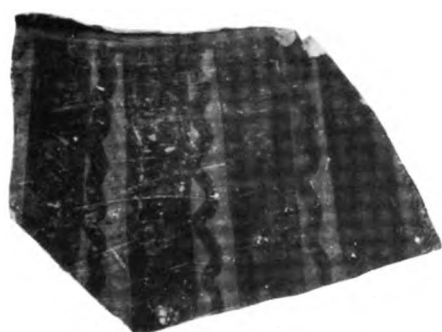


Fig. 286 c. B 2



Fig. 289. B 5

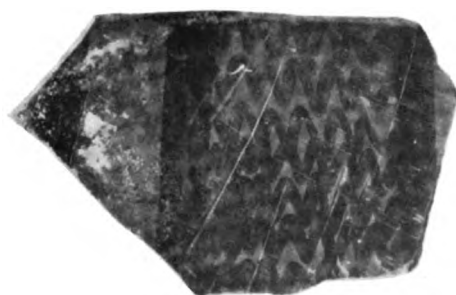


Fig. 290 b

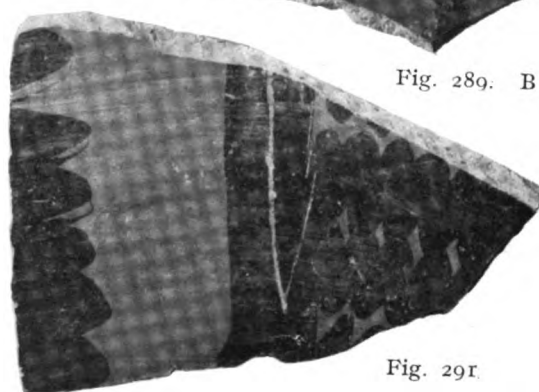


Fig. 291

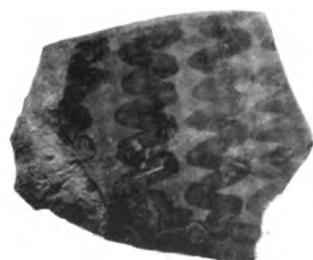


Fig. 292



Fig. 294 b. C II





Fig. 295 b

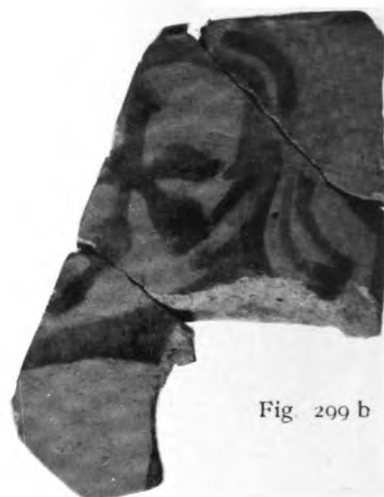


Fig. 299 b



Fig. 300



Fig. 302 a. E II 8



Fig. 307. G III 1, no 1461

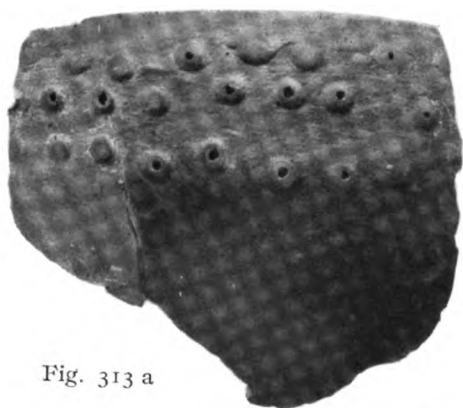


Fig. 313 a

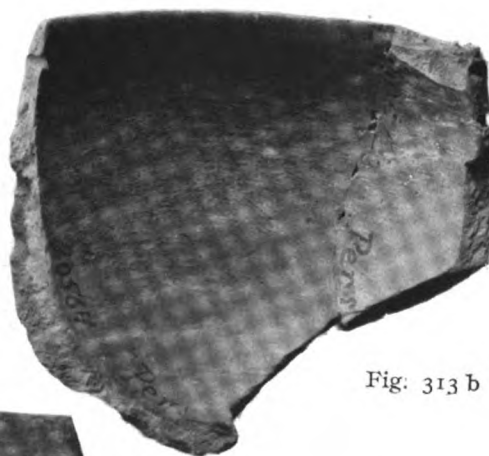


Fig. 313 b

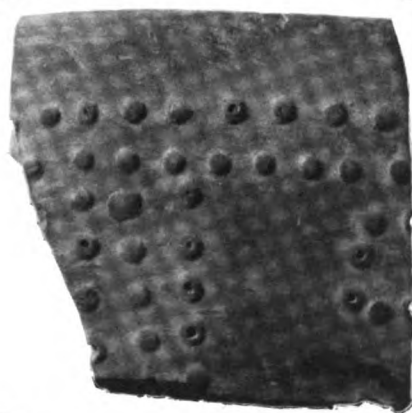


Fig. 313 c

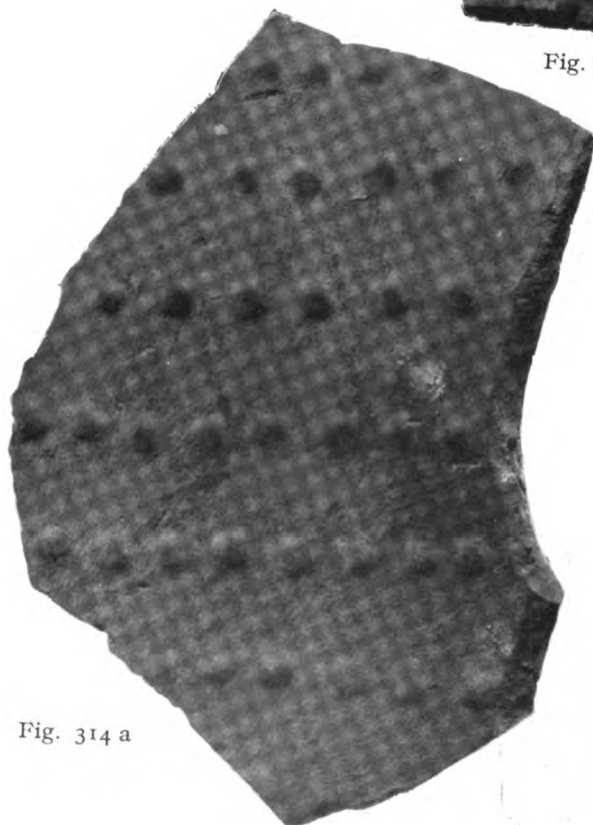


Fig. 314 a



Fig. 314 b



Fig. 315

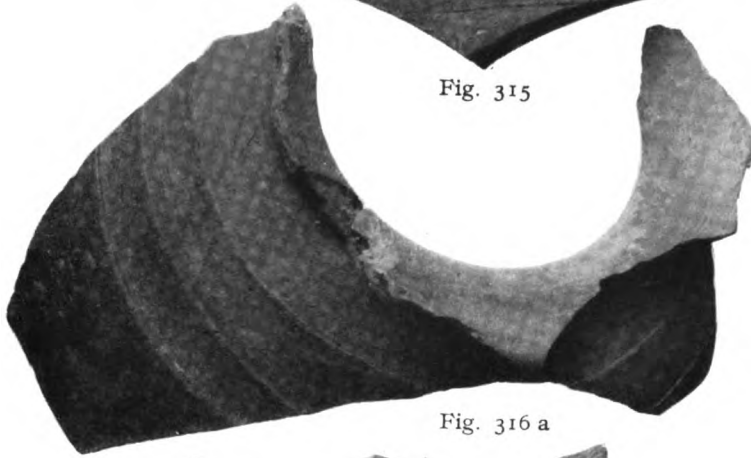


Fig. 316 a



Fig. 316 b

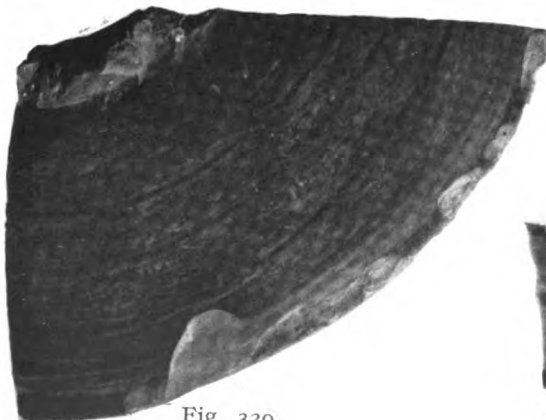


Fig. 320



Fig. 319



Fig. 318



Fig. 317 a



Fig. 317 b



Fig. 321



Fig. 323

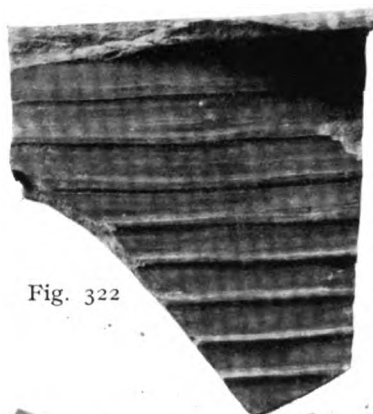


Fig. 322

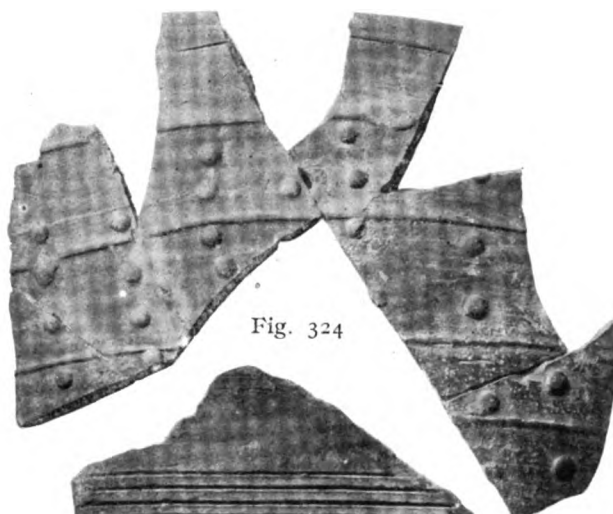


Fig. 324



Fig. 325



Fig. 327 b

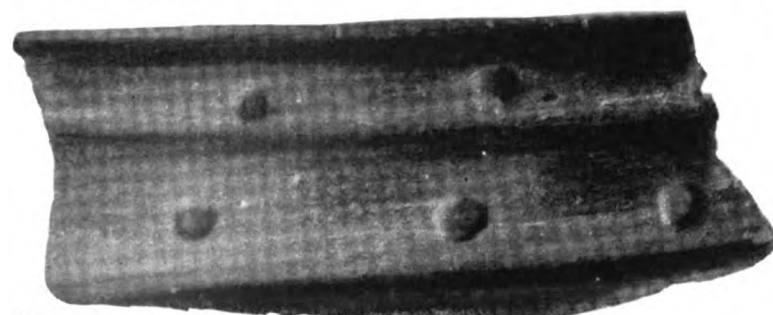


Fig. 326



Fig. 327 a



Fig. 328 a



Fig. 328 b

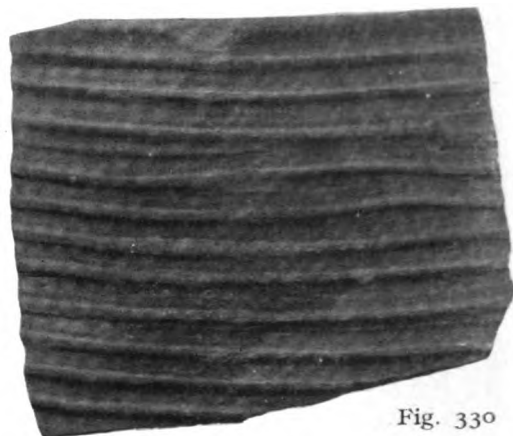


Fig. 330



Fig. 332

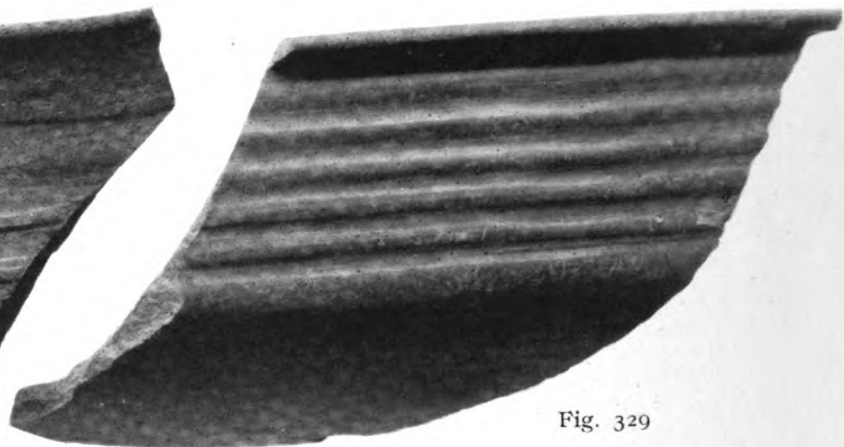


Fig. 329



Fig. 333



Fig. 331 a



Fig. 331 b



Fig. 334

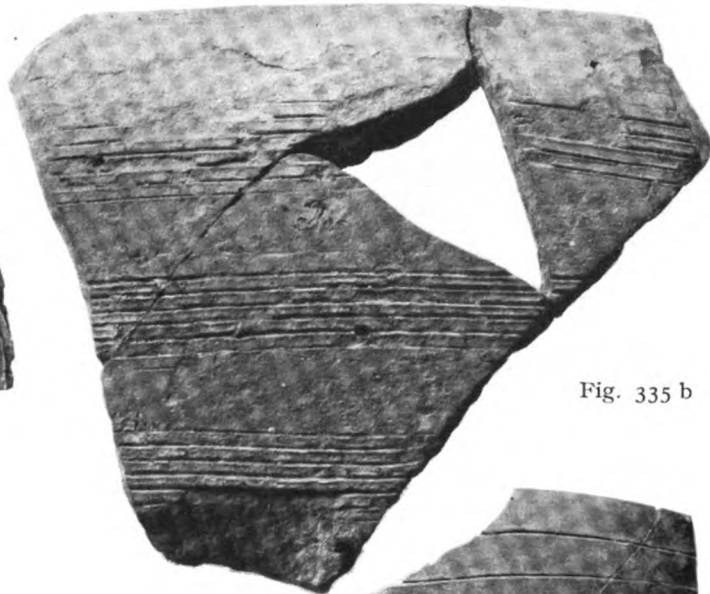


Fig. 335 b



Fig. 336



Fig. 335 a



Fig. 337 b



Fig. 337 a

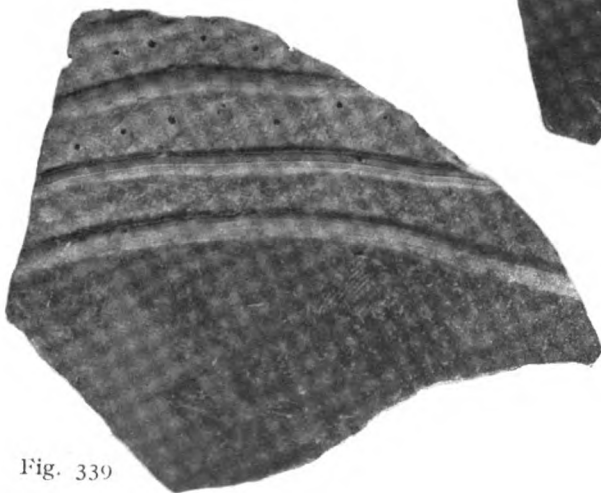


Fig. 339



Fig. 338



Fig. 340

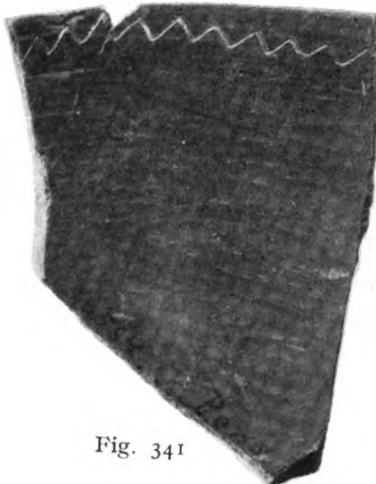


Fig. 341



Fig. 345 c. F III—11



Fig. 346 b. F III—17, no. 1773



Fig. 347. E III—3



Fig. 343. B III—4



Fig. 342. A II

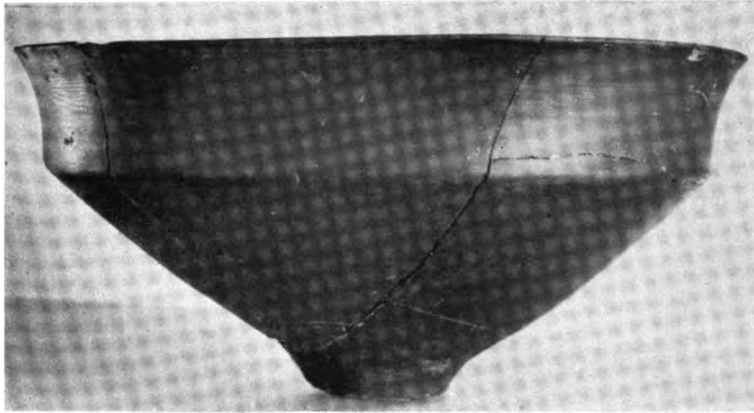


Fig. 348. E III—4 (+ 1.10), no. 1216

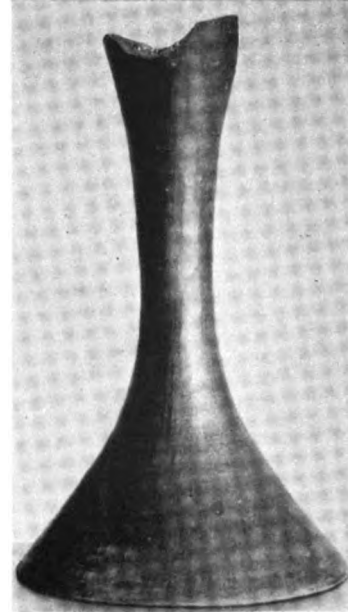


Fig. 350 a.
G III—4,
no. 1554

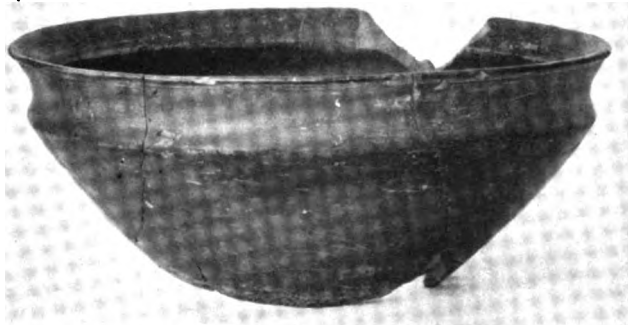


Fig. 349. E III—5, no. 1301



Fig. 359



Fig. 352. F III—17, no. 1774



Fig. 360. C II—43, no. 296



Fig. 361



Fig. 369. E II—13



Fig. 362. B III—6, no. 997

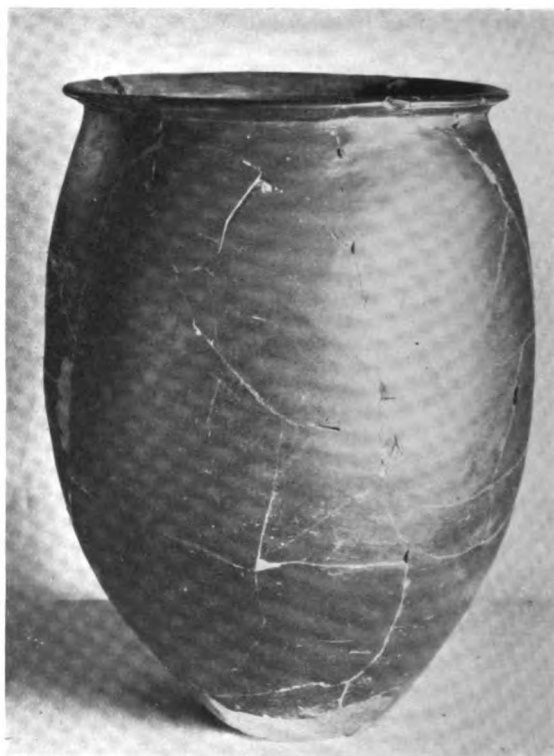


Fig. 363. B II—24, no. 709

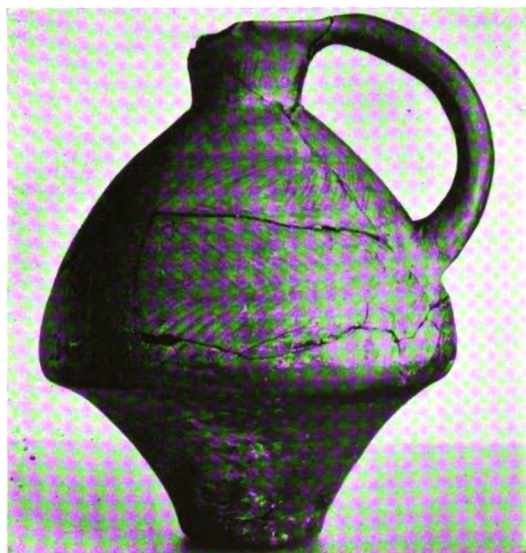


Fig. 374. B II—28, no. 745



Fig. 379. A II—45, no. 929



Fig. 386. C II—64, no. 377

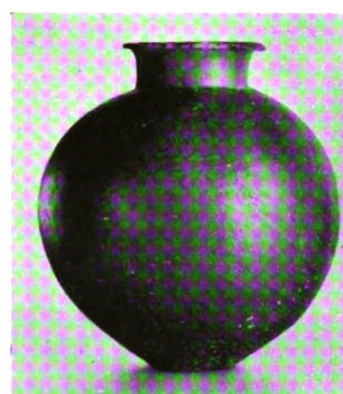


Fig. 396. E II—11, no. 713

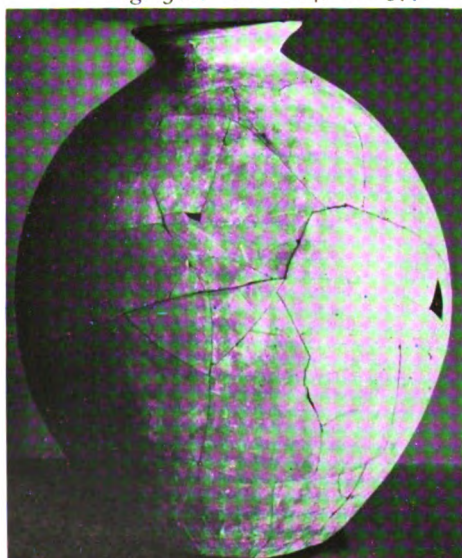


Fig. 384. C II—90, no. 535

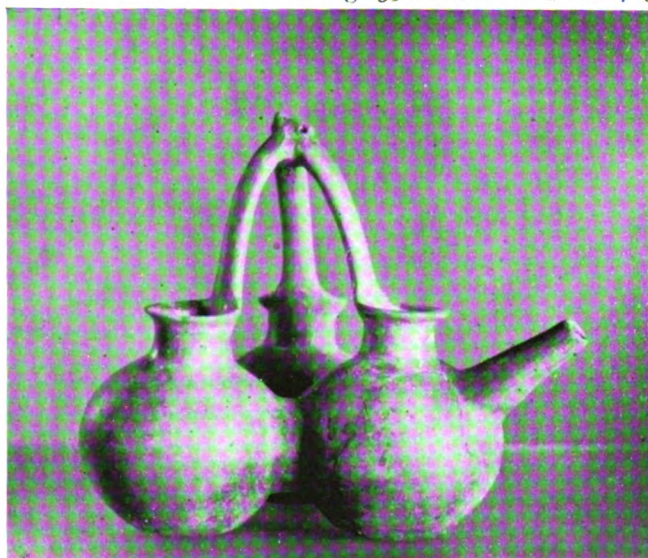


Fig. 373. E II S'



Fig. 404. F II-6



Fig. 404 b

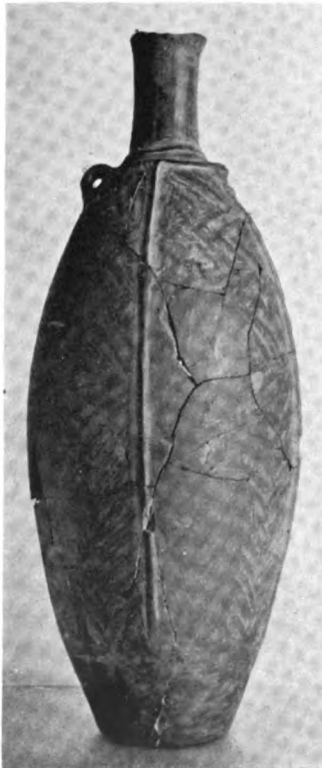


Fig. 408 b. B I-23, no. 136

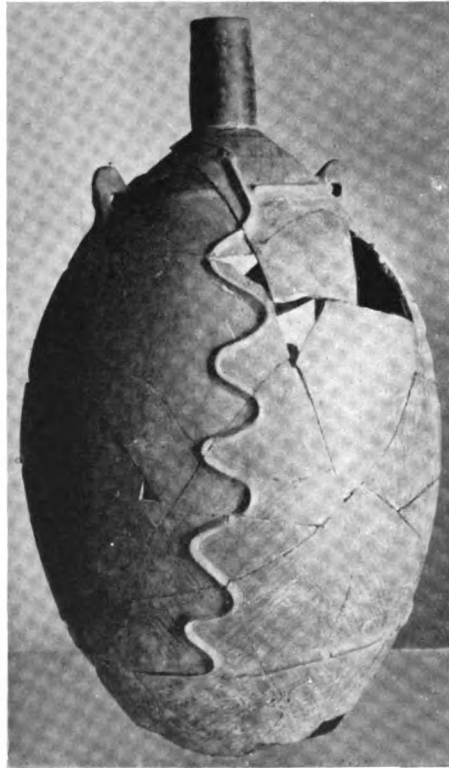


Fig. 409

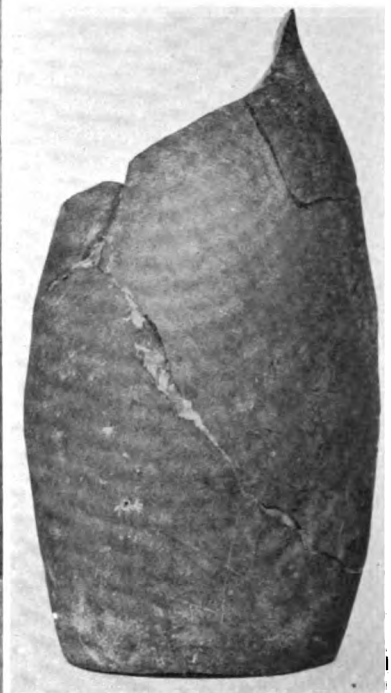


Fig. 415. A II-33 no. 80



Fig. 416.
F II—7, no. 1167

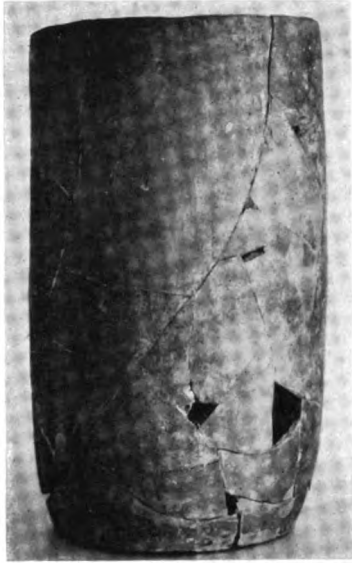


Fig. 418. E II—17, no. 1458

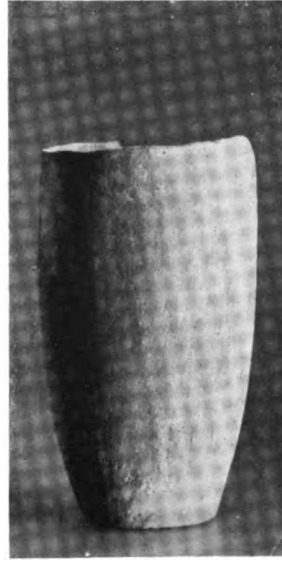


Fig. 419. B II—17



Fig. 420.
G II—5, no. 1018

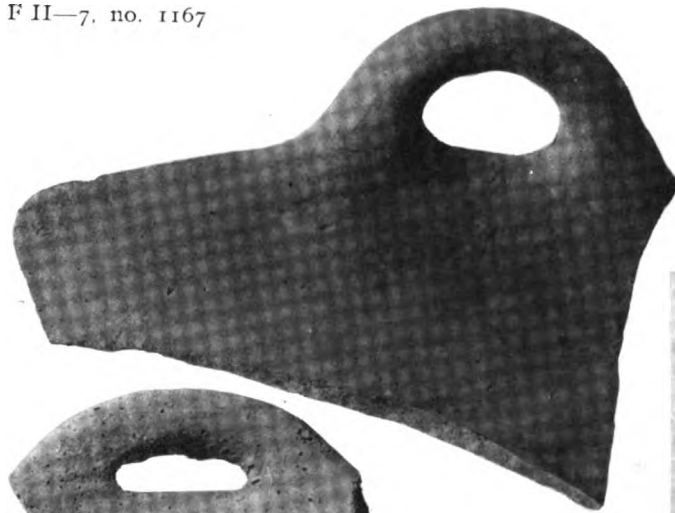


Fig. 420 b

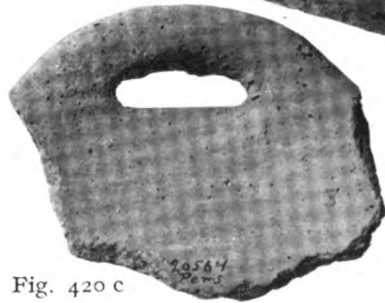


Fig. 420 c

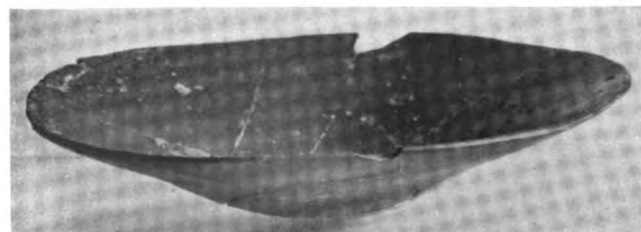


Fig. 421. E II—18, no. 1625



Fig. 422. E II—13, no. 776



Fig. 423



Fig. 424.
A I—6, no. 307



Fig. 425 a

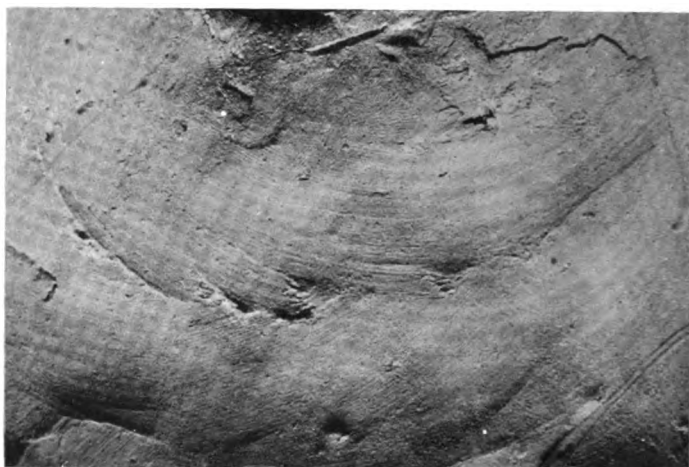


Fig. 425 b



Fig. 426



Fig. 427

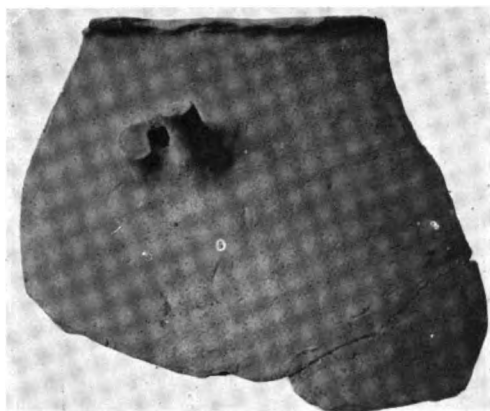


Fig. 428

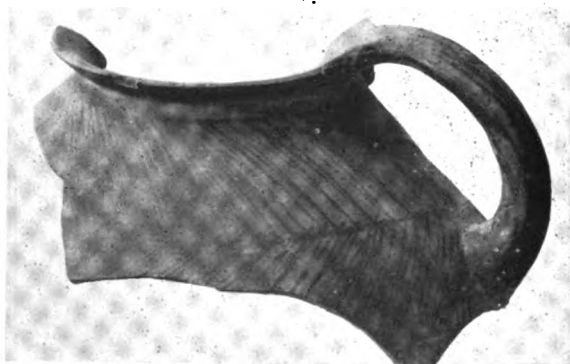


Fig. 430



Fig. 429. A III or II—32



Fig. 431



Fig. 433



Fig. 434

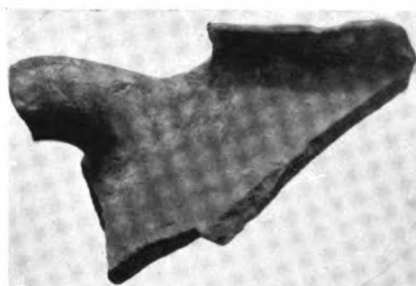


Fig. 432

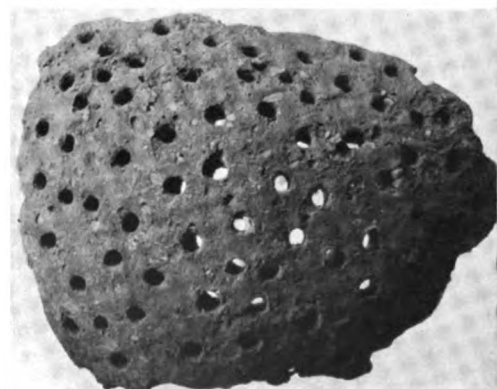


Fig. 435. C II—27

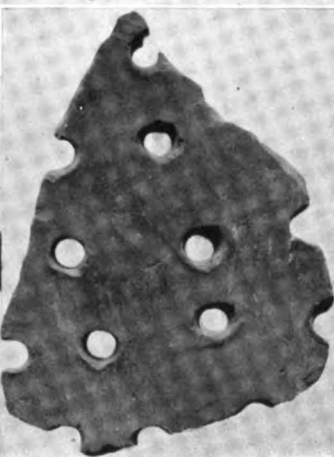


Fig. 436



Fig. 437



Fig. 439



Fig. 440



Fig. 441 b

Fig. 441 a



Fig. 442



Fig. 443



Fig. 446



Fig. 444



Fig. 445 a



Fig. 447

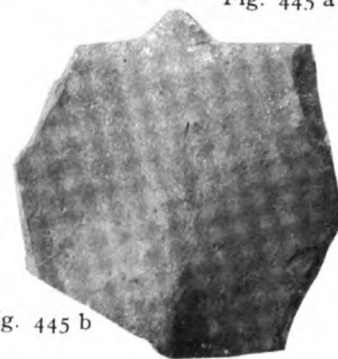


Fig. 445 b



Fig. 453

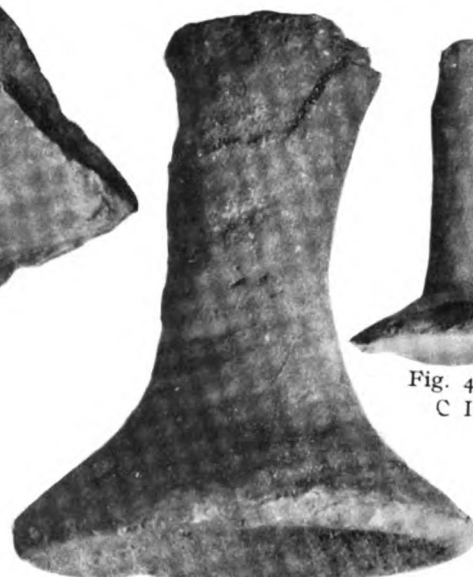


Fig. 452 a



Fig. 452 b.
C III



Fig. 454 a. G II



Fig. 454 b



Fig. 455



Fig. 456



Fig. 457



Fig. 458



Fig. 458 a



Fig. 459. no. 480

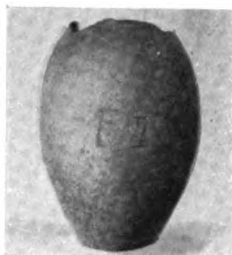


Fig. 460



Fig. 463. no. 1046

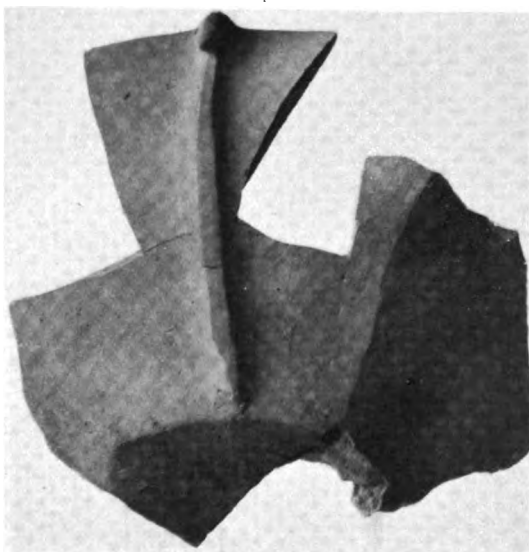


Fig. 461 a



Fig. 461 b

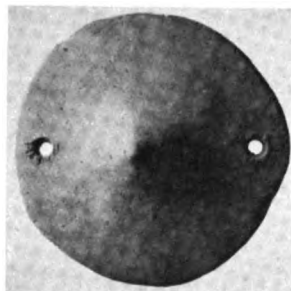


Fig. 462.
E II—17, no. 1036

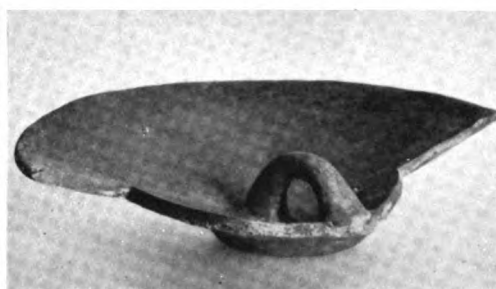


Fig. 466 a

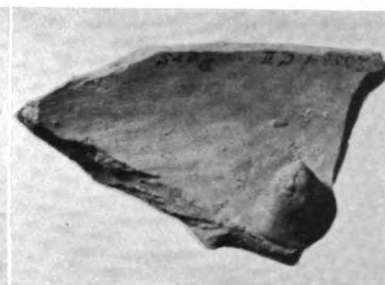


Fig. 466 b. H II—8, no. 1767



Fig. 464. F II, no. 1356



Fig. 467. no. 1166, 1164, 1165

Fig. 468



Fig. 469

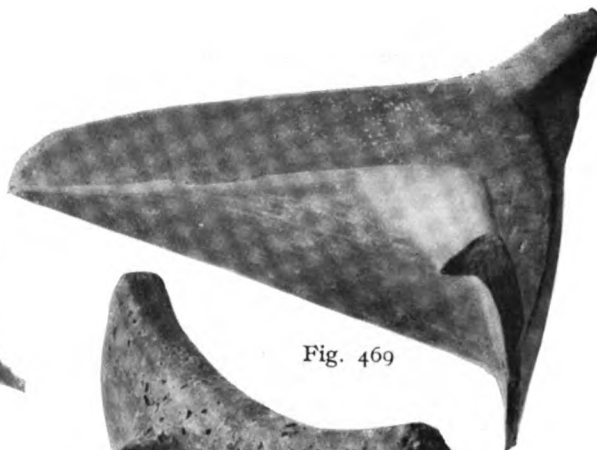


Fig. 470

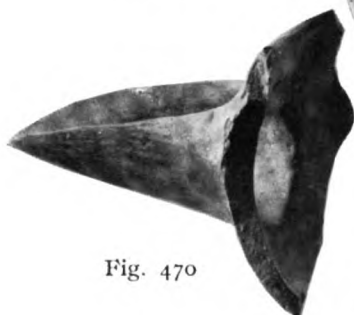


Fig. 471



Fig. 472

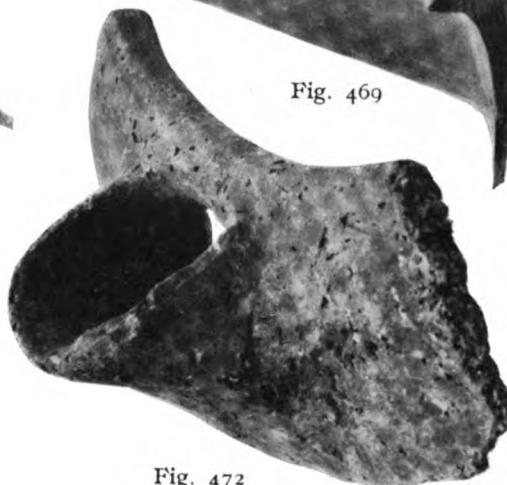


Fig. 473



Fig. 474 b



Fig. 475

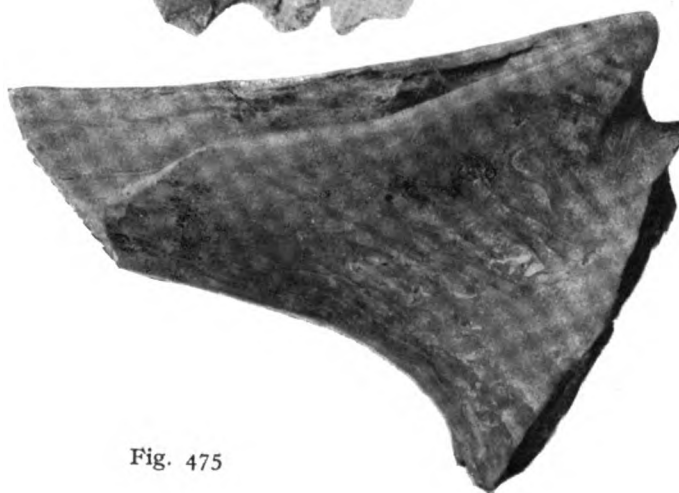


Fig. 474 a

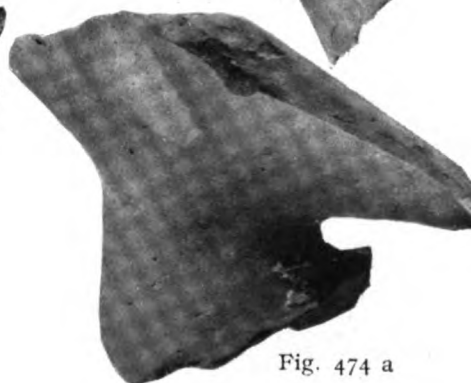




Fig. 476



Fig. 477



Fig. 478

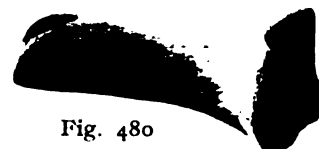


Fig. 480



Fig. 479

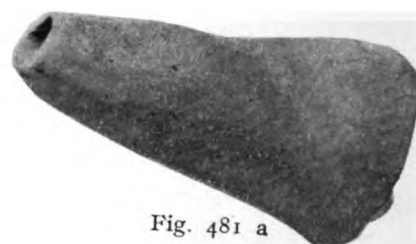


Fig. 481 a

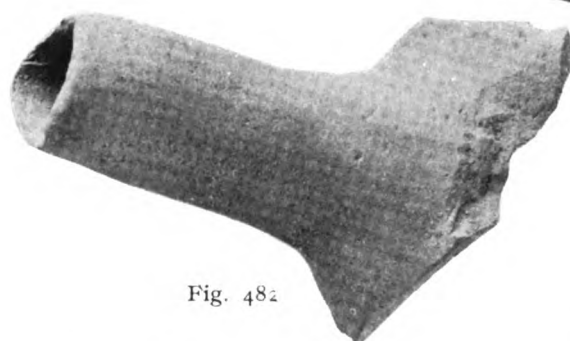


Fig. 482



Fig. 481 b

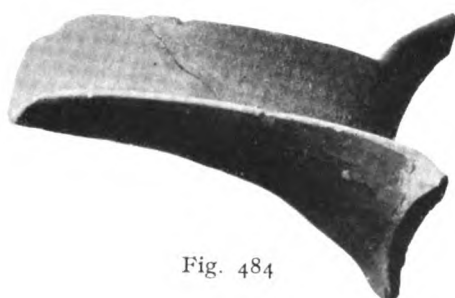


Fig. 484



Fig. 483

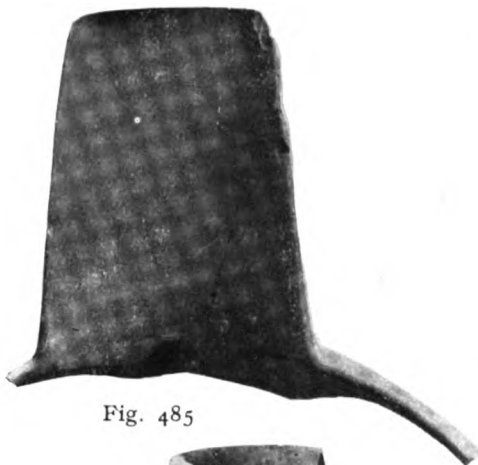


Fig. 485



Fig. 486.b. G II



Fig. 486 a. G II



Fig. 487



Fig. 488

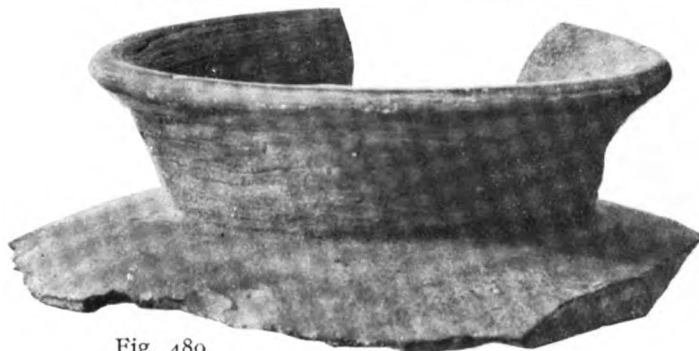


Fig. 489

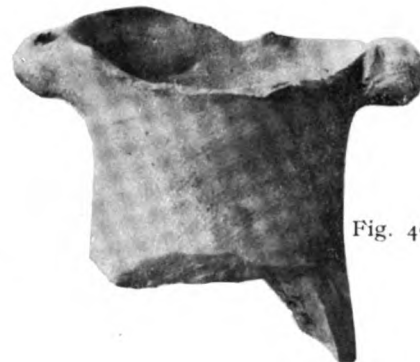


Fig. 491

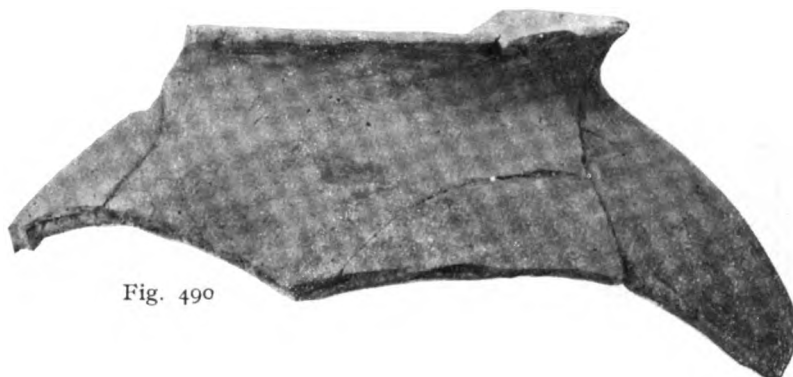


Fig. 490

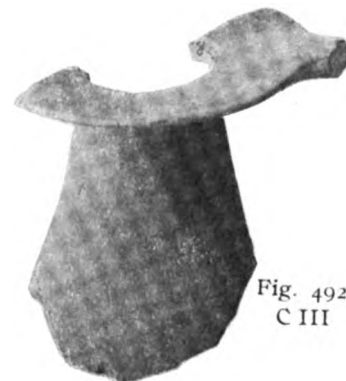


Fig. 492.
C III



Fig. 493 a—b



Fig. 496



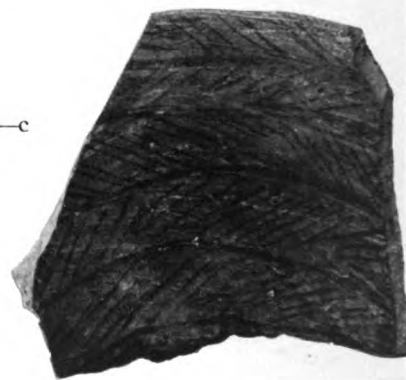
Fig. 494



Fig. 497



Fig. 498 a—c



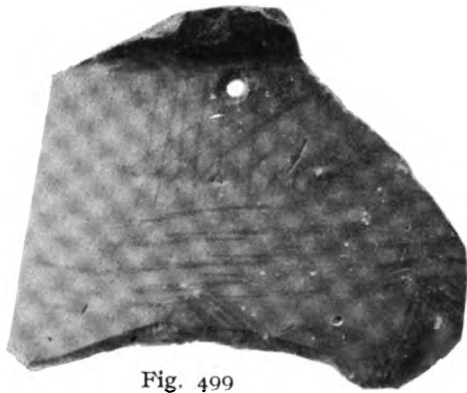


Fig. 499



Fig. 500 a



Fig. 500 b

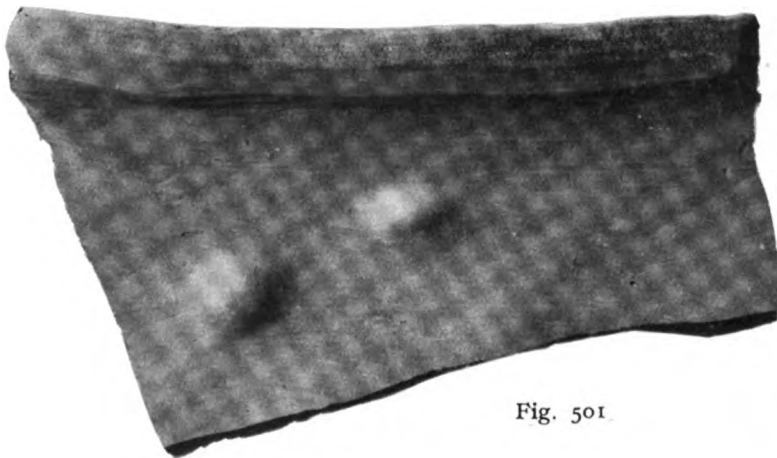


Fig. 501



Fig. 502



Fig. 503



Fig. 504



Fig. 505 a



Fig. 505 b



Fig. 505 e

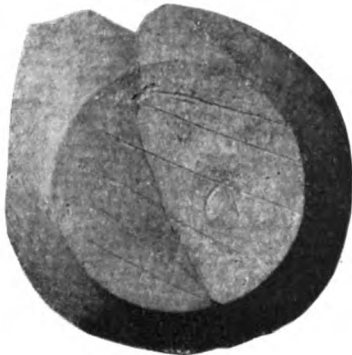


Fig. 505 c



Fig. 505 d



Fig. 506 b

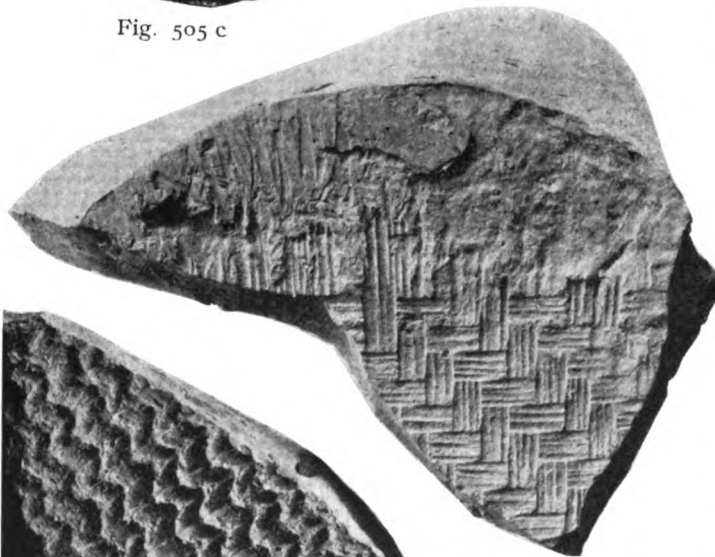


Fig. 506 a

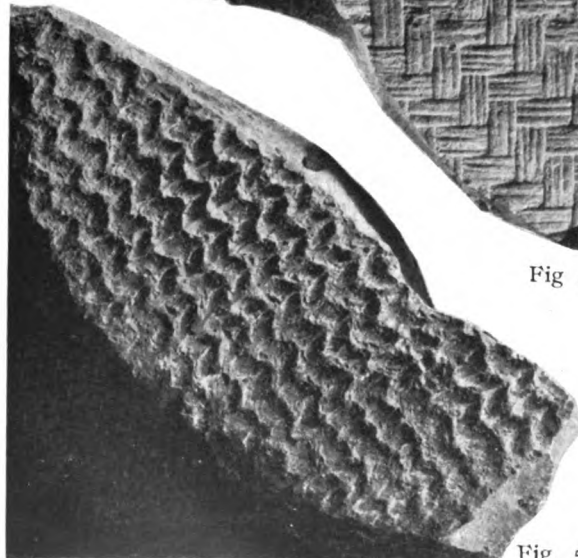
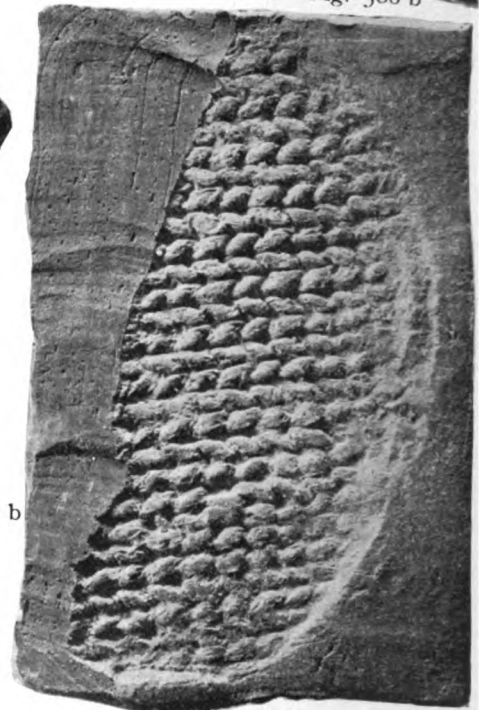


Fig. 507 a

Fig. 507 b



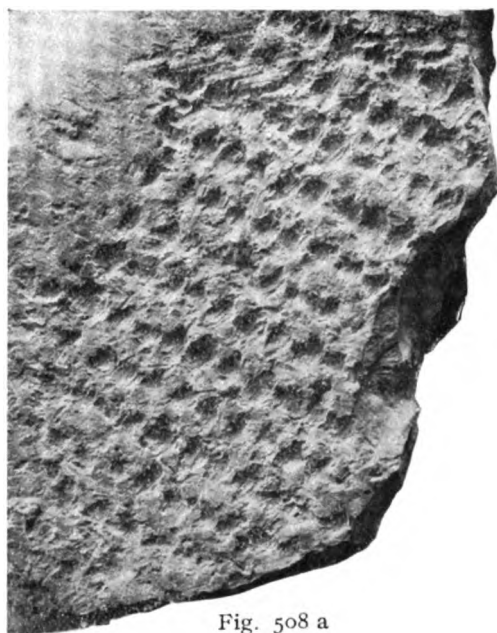


Fig. 508 a

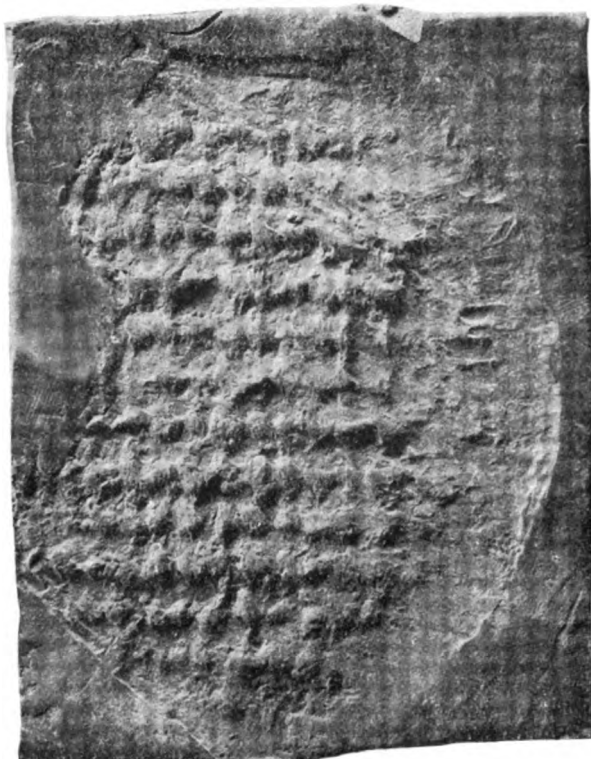


Fig. 508 b



Fig. 510 a E II, no. 842



Fig. 513



Fig. 512

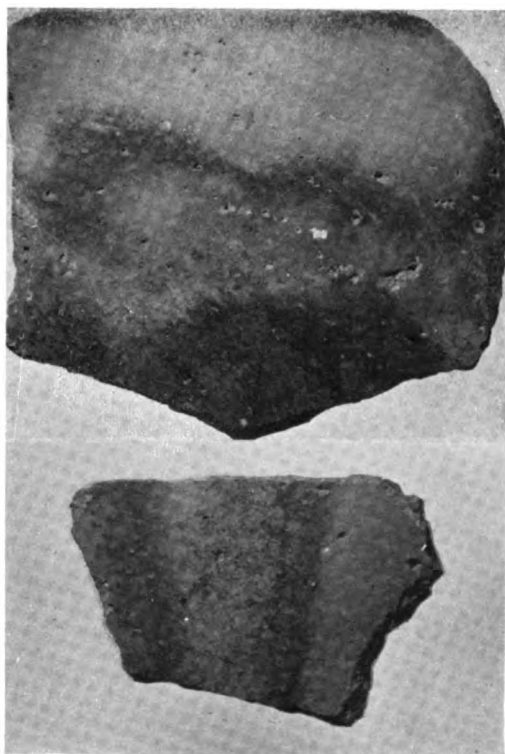


Fig. 515 a—b



Fig. 520 b

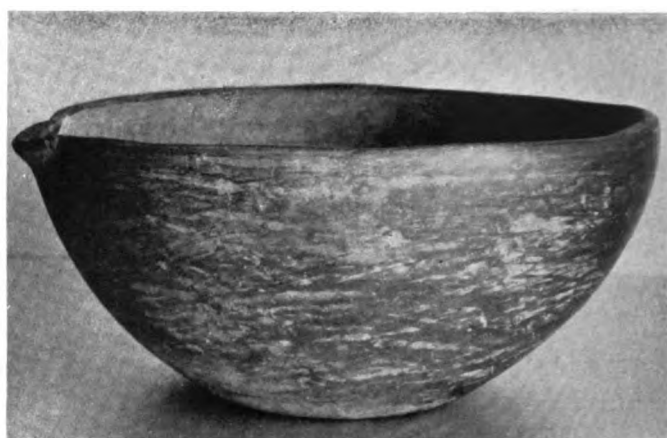


Fig. 516. G II S¹ a, no. 841



Fig. 517. F III



Fig. 518. E II—12, no. 714



Fig. 519. C I—22, no. 181

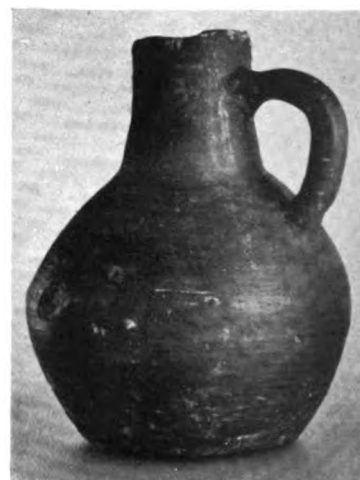


Fig. 520. F II, no. 1001



Fig. 521



Fig. 523



Fig. 528



Fig. 527 c



Fig. 527 d



Fig. 527 e



Fig. 529 1-22



Fig. 530. no. 574



Fig. 531. no. 387



Fig. 532. no. 1148



Fig. 535. no. 732



Fig. 533. no. 812



Fig. 536. no. 1555



Fig. 534. no. 1555



Fig. 537



Fig. 538



Fig. 541. D III, no. 511



Fig. 539 a—b



Fig. 540



Fig. 543 b



Fig. 542
H II—7, no. 1765



Fig. 545 a—b

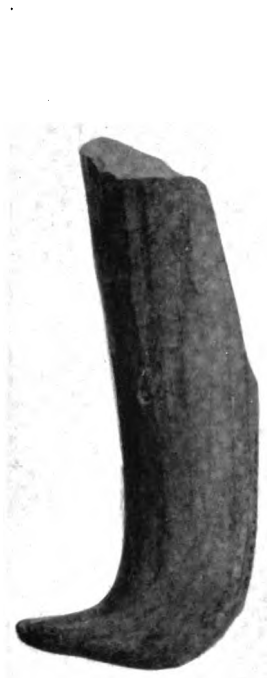


Fig. 546

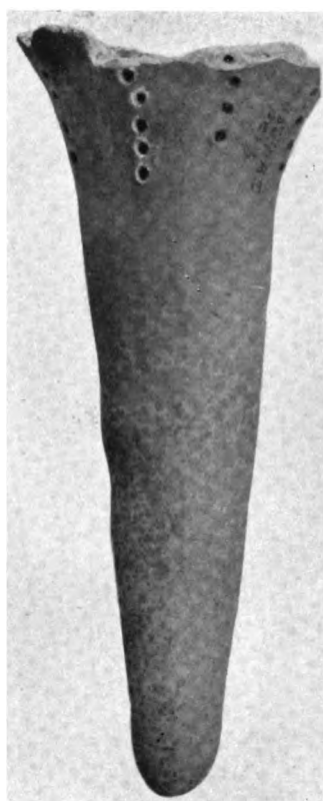


Fig. 547



Fig. 548 a—b



Fig. 549



Fig. 553



Fig. 550

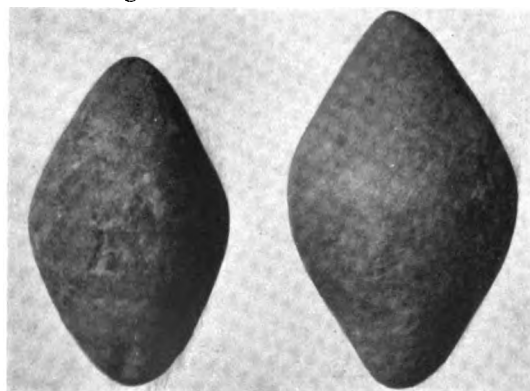


Fig. 551

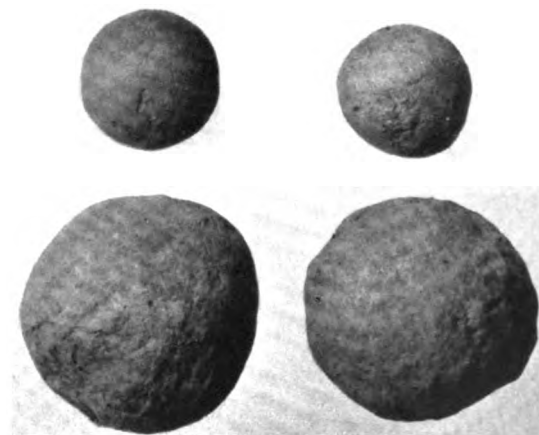


Fig. 552

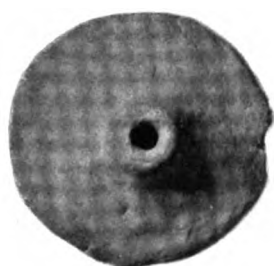


Fig. 554



Fig. 555



Fig. 556. E III—8



Fig. 557

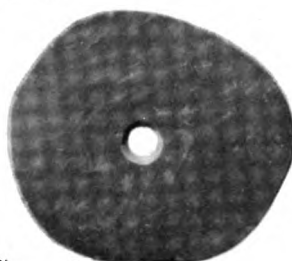


Fig. 558



Fig. 559



Fig. 561



Fig. 562



Fig. 563 a—b



Fig. 564



Fig. 567



Fig. 568



Fig. 569 a—b

Fig. 570



Fig. 571. B—2, no. 730



Fig. 575. A II—107, no. 381



Fig. 574. B II—81 = no. 599



Fig. 576. A I—10, no. 40



Fig. 577 a

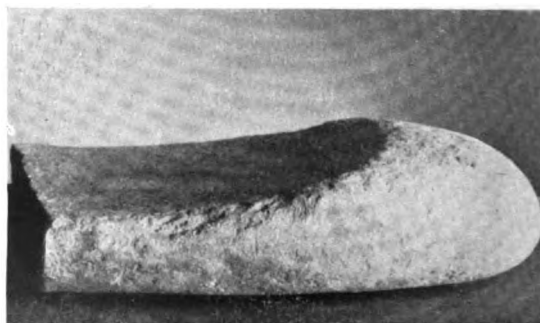


Fig. 577 b

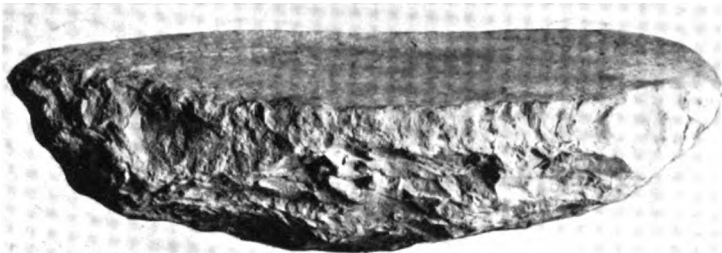


Fig. 578

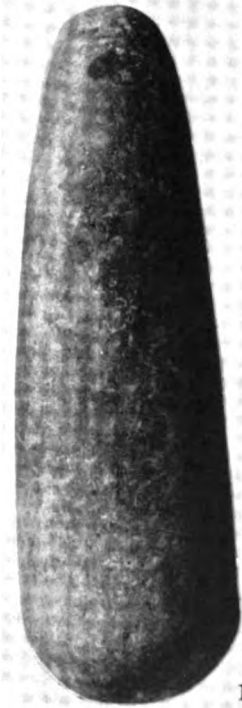


Fig. 579 a—b



Fig. 579 c



Fig. 580 a



Fig. 580 b



Fig. 580 c—d



Fig. 580 e—f



Fig. 581. A II—44, no. 134



Fig. 582 a



Fig. 582 b. no. 486.



Fig. 582 c

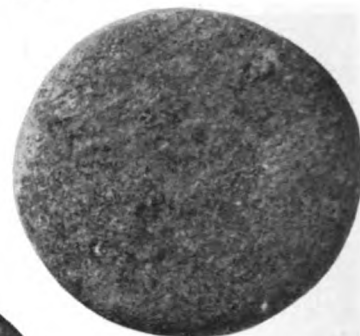


Fig. 582 d



Fig. 582 e



Fig. 582 g



Fig. 582 f



Fig. 583



Fig. 584 a—b



Fig. 585

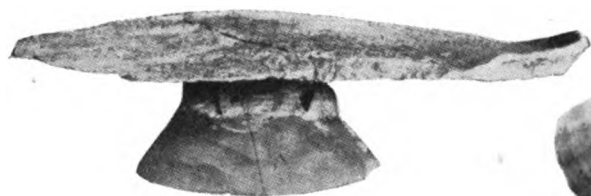


Fig. 587. G II S²

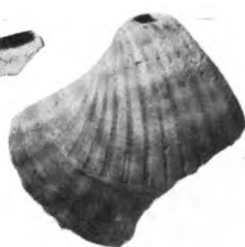


Fig. 589 a—b



Fig. 591 a—b—c. 591 c = no. 507



Fig. 592



Fig. 593



Fig. 597, no. 1435

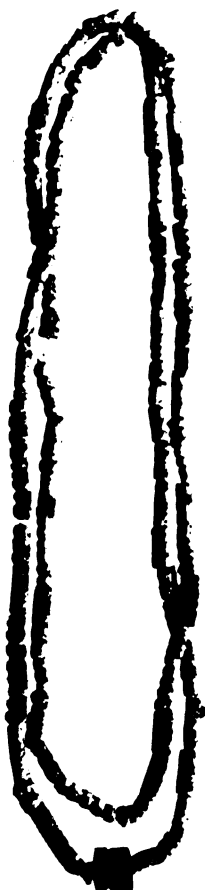


Fig. 599, no. 629

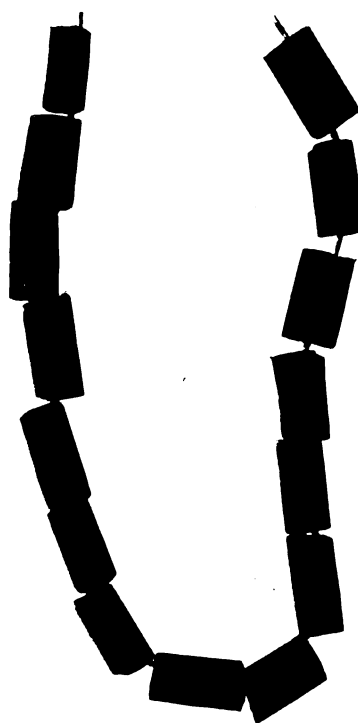


Fig. 590. no. 1506



Fig. 594. no. 283



Fig. 595



Fig. 598, no. 1259



Fig. 596, no. 68



Fig. 600 a.
C II S² no. 274



Fig. 600 b,
A II 106, no. 380



Fig. 609, no. 1002



Fig. 601; 603—605



Fig. 602, no. 273



Fig. 610



Fig. 611



Fig. 612



Fig. 613



Fig. 614 a—d



Fig. 615



Fig. 616 a—c



Fig. 617 a—b



Fig. 618

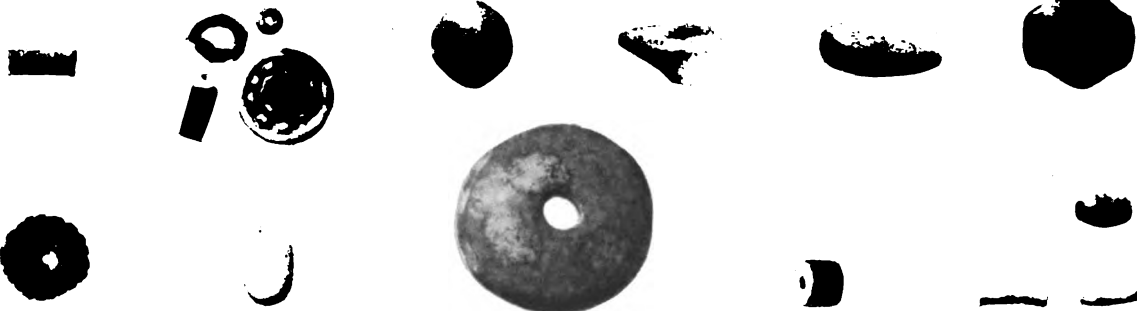


Fig. 620, no. 1709



Fig. 622 a—g

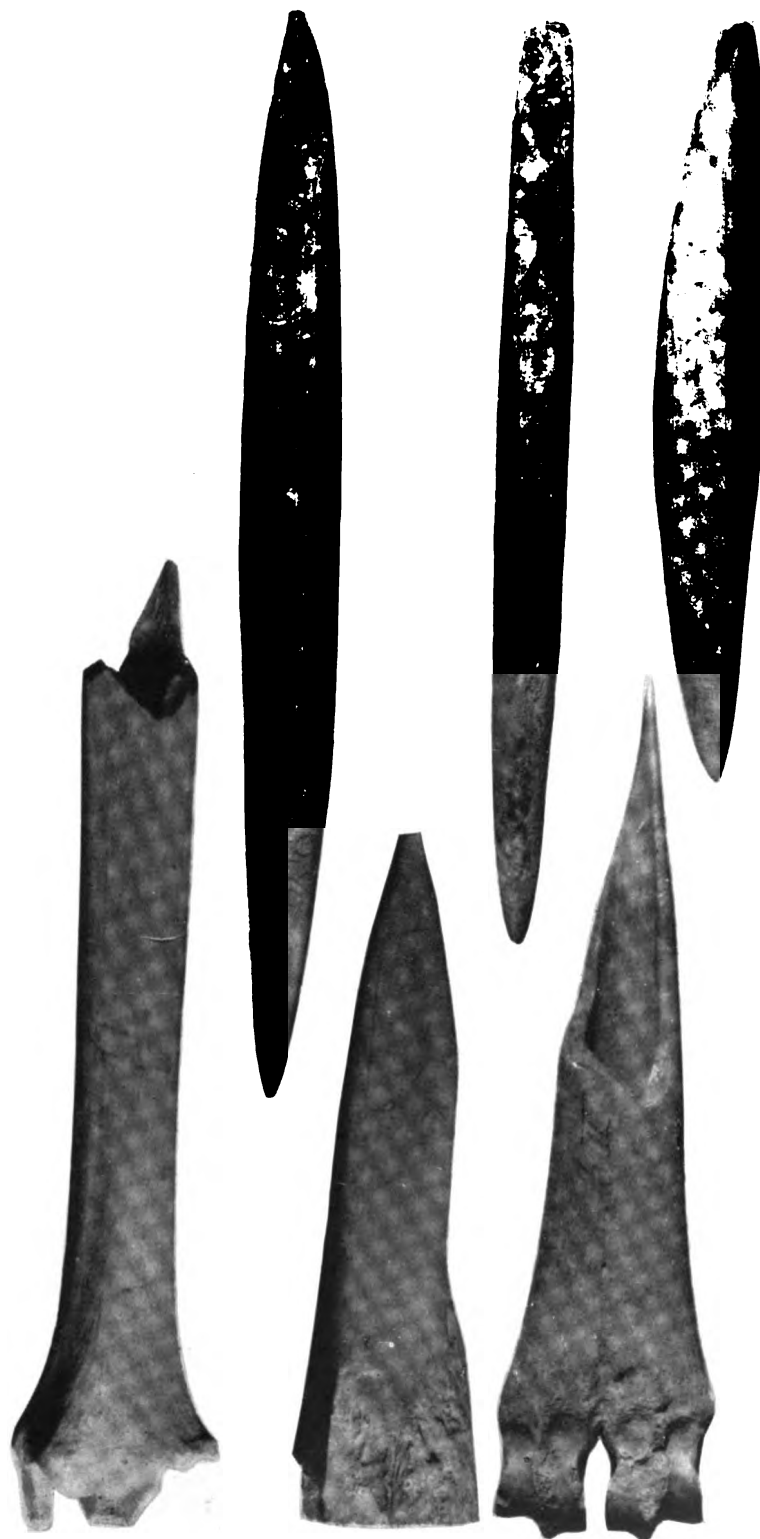


Fig. 623 a—f



Fig. 624



Fig. 625



Fig. 626

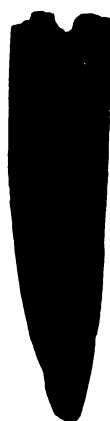


Fig. 627



Fig. 628



Fig. 629



Fig. 630

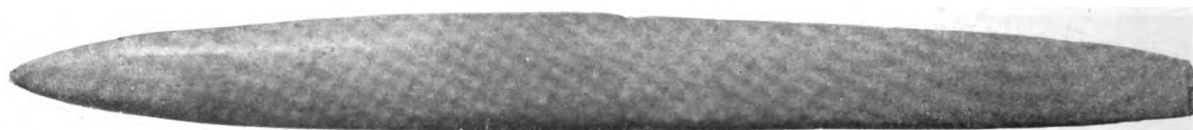


Fig. 631



Fig. 632



Fig. 632



Fig. 633



Fig. 634



Fig. 658



Fig. 657

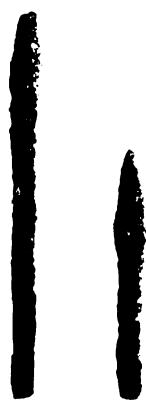


Fig. 653 a—b



Fig. 660



Fig. 659



Fig. 662

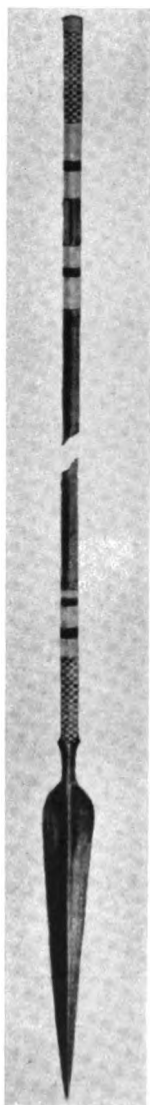


Fig. 665



Fig. 667

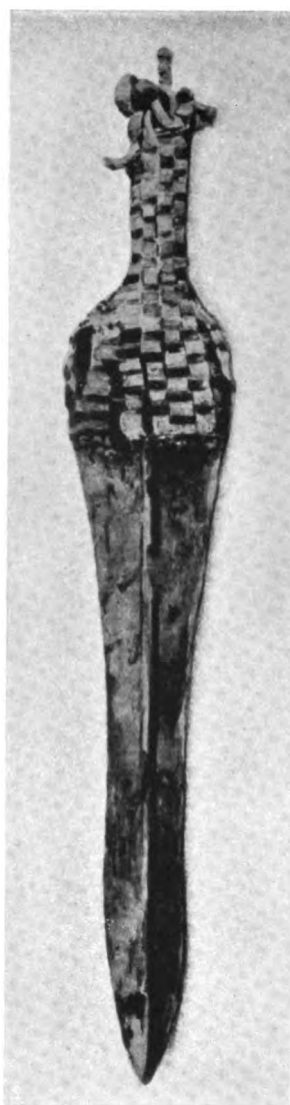


Fig. 666



Fig. 666

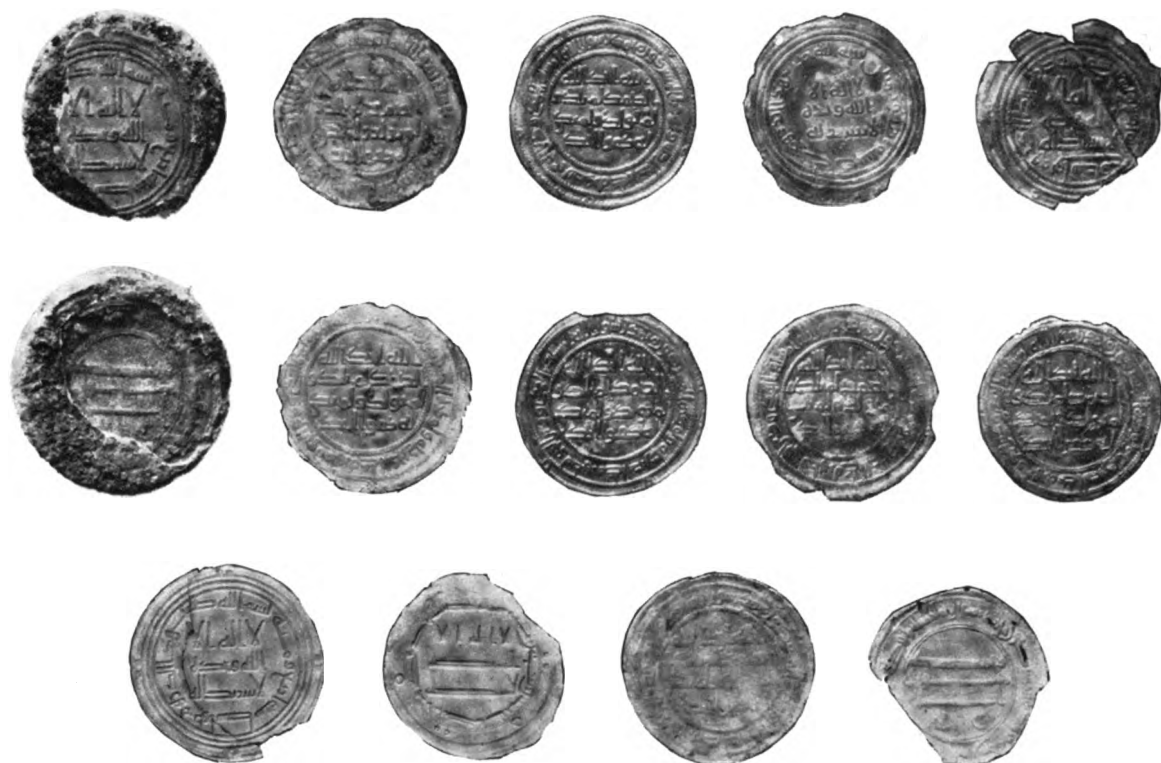


Fig. 668



Fig. 669.
H I, no. 1081



Fig. 672



Fig. 670



Fig. 671 a.
C I, no. 151



Fig. 671 b

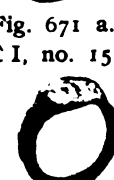


Fig. 671 c



Fig. 673,
no. 662



Fig. 674. H I—3, no. 1201

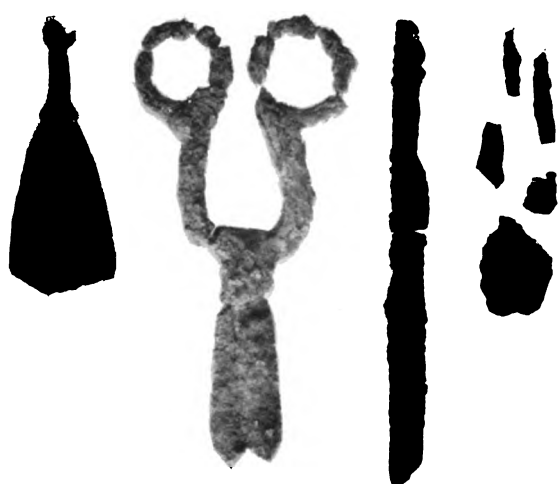


Fig. 675 a—d. G I S⁴, no. 965



Fig. 677



Fig. 678.
A I—20, no. 10



Fig. 679 a—d, a = no. 70,
b = no. 604, c = no. 518, d = no. 508



Fig. 682 b

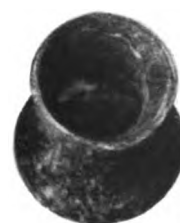


Fig. 681
E I. no. 606



Fig. 680



Fig. 683



Fig. 684



Fig. 685



Fig. 686



Fig. 688.
H I, no. 1049

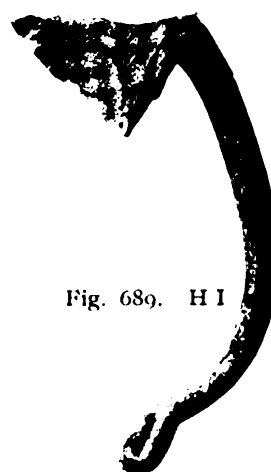


Fig. 689. H I



Fig. 687. H I



Fig. 686



Fig. 691



Fig. 690. A I, no. 4

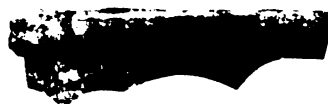


Fig. 692 a—d



Fig. 693



Fig. 694

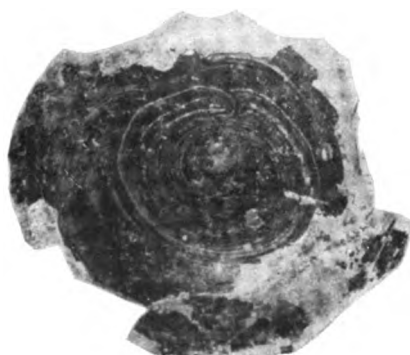


Fig. 695



Fig. 696



Fig. 696



Fig. 697

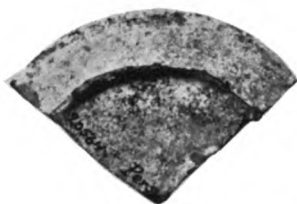


Fig. 698



Fig. 699 a



Fig. 699 b



Fig. 699 c



Fig. 699 d



Fig. 699 e



Fig. 699 f



Fig. 699 g



Fig. 700 a—b



Fig. 701 a—e

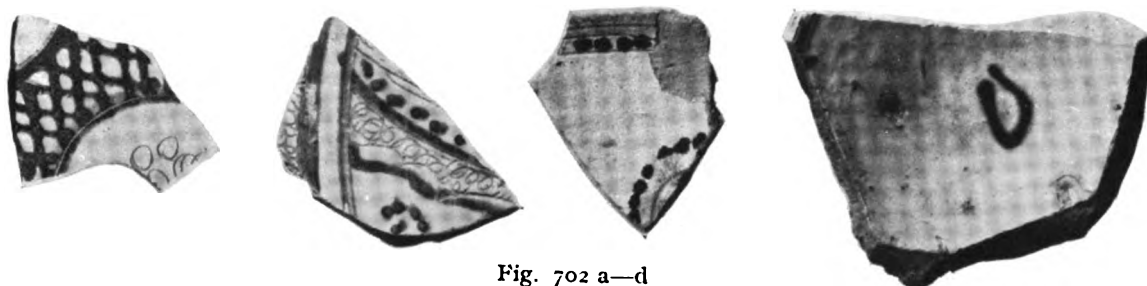


Fig. 702 a—d



Fig. 703 a—c



Fig. 704



Fig. 705



Fig. 706



Fig. 707 a. nr. 121



Fig. 707 b

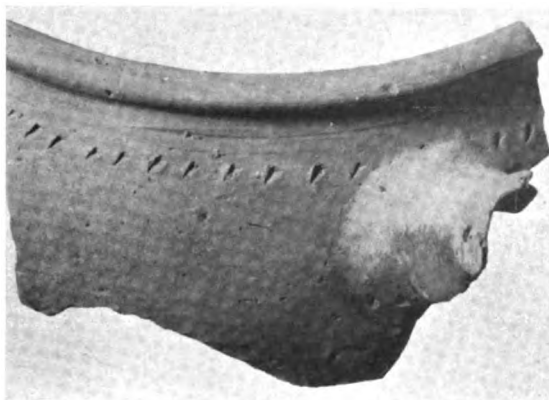


Fig. 708



Fig. 709 C I S¹, no. 113



Fig. 710 A I—12, no. 82

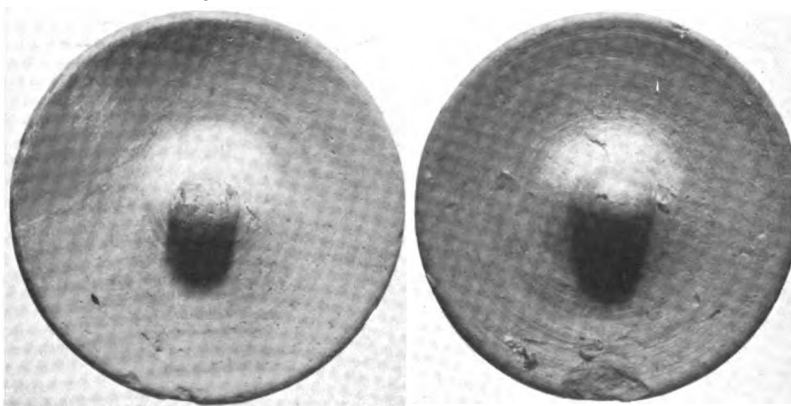


Fig. 711 C I—13, no. 110

Fig. 712 A I

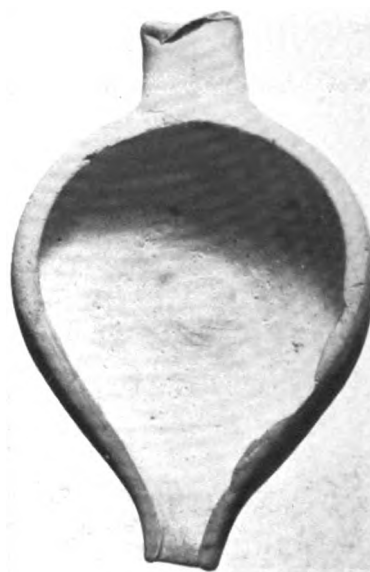


Fig. 713 H I S², no. 513



Fig. 714 a. A I, no. 8



Fig. 714 b. C I S^a a, no. 114



Fig. 716



Fig. 717



Fig. 715

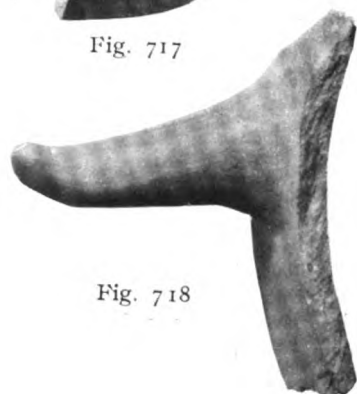


Fig. 718

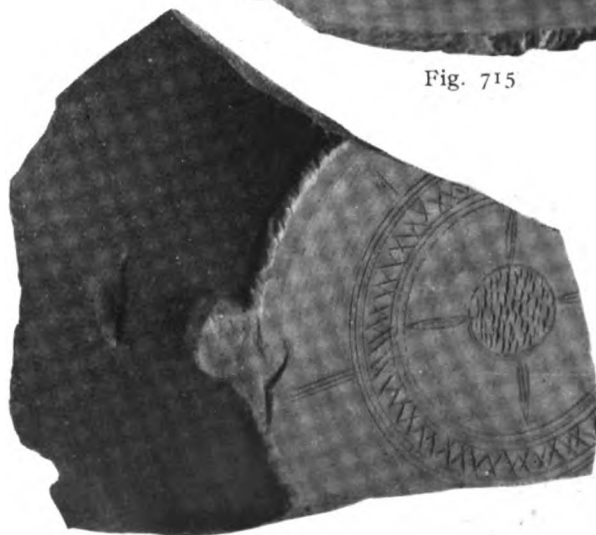


Fig. 719 a



Fig. 719 b



Fig. 720

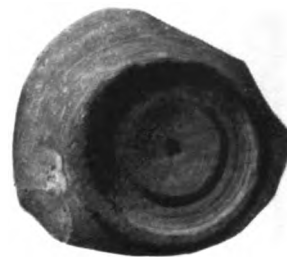


Fig. 721



Fig. 722



Fig. 723 a



Fig. 723 b

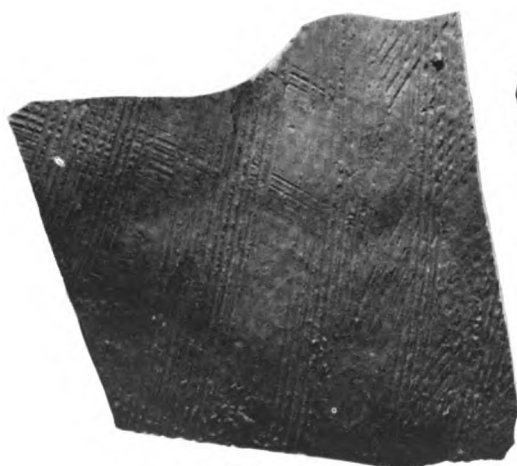


Fig. 723 b



Fig. 724

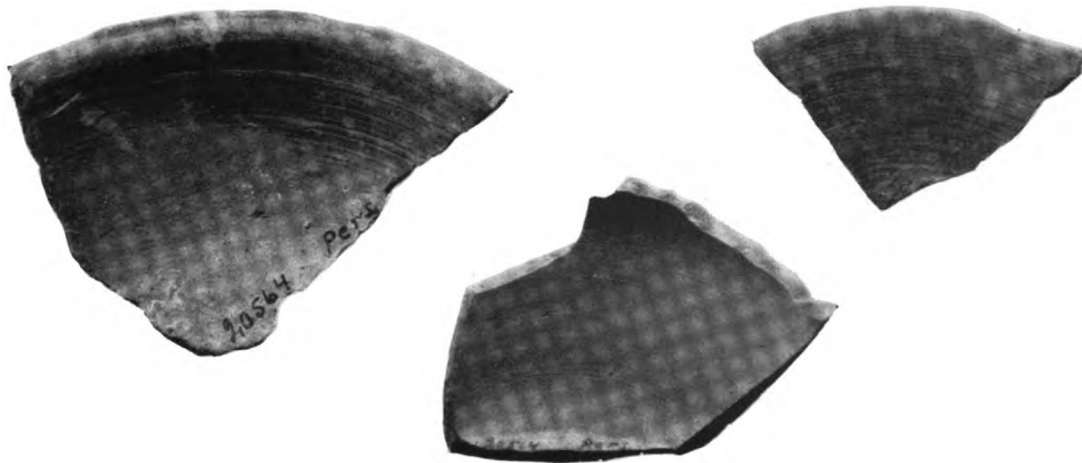


Fig. 725 a-c



Fig. 726. E II—22, no. 1734



Fig. 727. E II—15, no. 876



Fig. 728. E II—10, no. 712

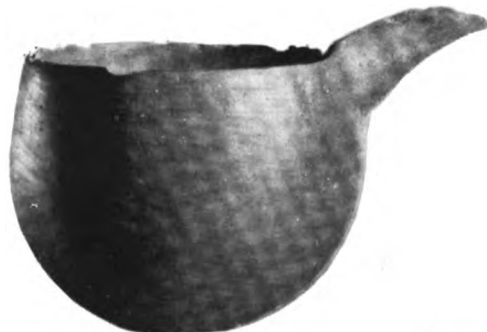


Fig. 729. F II—5, no. 973



Fig. 730. F III—1, no. 1328



Fig. 275 b



Fig. 222 a
no. 1730, E III S⁷



Fig. 221 and 278, no. 1732 E III S⁸



Fig. 296



Fig. 277
A I



Fig. 282



Fig. 529
no. 731, B II 29

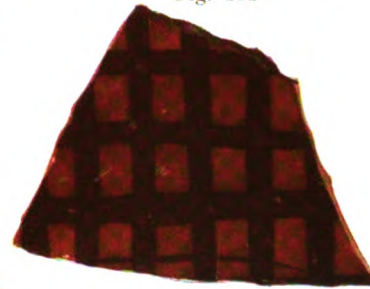


Fig. 293



Fig. 280



Fig. 275
no. 499, D III S²



Fig. 279 and 289 b
E III 7

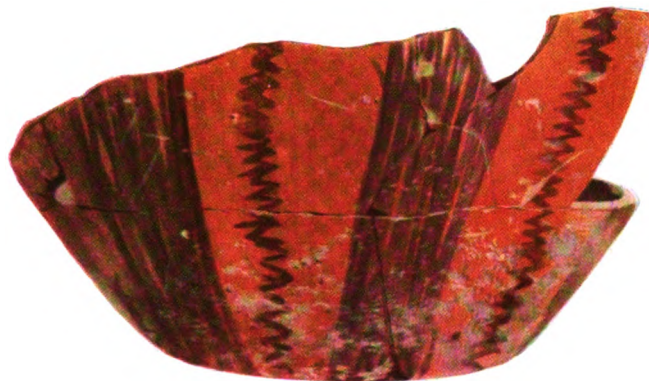


Fig. 280
B III 1



Fig. 641
no. 734, B II



Fig. 643
no. 659, F I

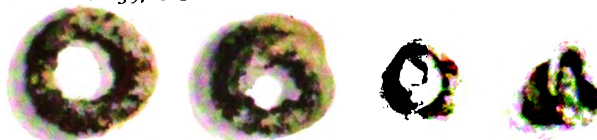


Fig. 642
no. 838, G II S²



Fig. 611 a
no. 1682, E III



Fig. 611 b
no. 590, A III

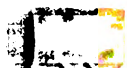


Fig. 612 a—d
no. 600, B II S⁷



Fig. 591
no. 485, C II

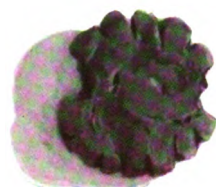


Fig. 594
no. 283 A II



Fig. 645
no. 570, B II S⁶



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